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CRPL-F 228 PART A

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PART A
IONOSPHERIC DATA

ISSUED
AUGUST 1963

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

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 (Elsevier, 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 1962, 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	36	34	32	31	30	30
1963	29											

Units of Ionospheric Data Tables

foF2, foEs - - - Tenths of a megacycle
 foF1, foE - - - Hundredths of a megacycle
 h'F2, h'F, h'E - Kilometers
 (M3000)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.

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POLE STATION, ANTARCTICA
WASHINGTON, D.C.

OTTAWA, CANADA
TABLE 27
145-5N, 75-5W
TIME 15:00

HOUR	TIME 15:00																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED	20	22	22	24	22	22	25	46	57	63	70	72	72	70	69	62	55	45	31	28	24	21	20
CNT	23	24	25	25	25	24	27	29	40	60	69	73	78	78	76	74	70	60	50	40	32	25	22	
LD	20	20	20	20	20	20	24	45	54	60	65	69	69	68	62	58	50	40	32	25	21	20	20	
hF2	MED	235 250 240 250 240 225																						
CNT	1	2 18 27 27 30 25 17																						
LD																								
hF	MED	320	320	300	300	290	270	220	220	220	230	215	210	220	240	250	285	300	330					
CNT	26	26	25	28	29	27	28	29	30	28	31	29	30	31	30	30	29	30	27	24				
LD																								
M3000IF2	MED	250	290	300	300	300	310	340	350	340	340	340	340	340	340	330	320	310	310	310				
CNT	8	8	5	6	5	4	4	6	22	20	27	21	21	21	19	22	17	16	18	12	7	4		
LD																								
f6F1	MED	360 360 370																						
CNT	4	4 367 360 350 2																						
LD																								
f6E	MED	180	220	260	280	280	280	280	260	220	190													
CNT	18	19	16	16	18	19	21	21	21	21														
LD																								
h'E	MED	140	120	120	120	120	120	120	120	120	120	130												
CNT	8	23	24	24	26	22	15	13																
LD																								
f6Es	MED	28	26	27	27	28	28	27	27	26	250	27	26	28	28	28	28	28	28	29	28	28	28	
CNT																								

SWEEP 1.0 MC TO 16.0 MC IN 16 SECONDS.
DECEMBER, 1961

ROME, ITALY
TABLE 28
141-5N, 12-5E
TIME 15:00

HOUR	TIME 15:00																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED	36	35	35	34	36	33	29	34	56	61	68	76	77	70	68	67	61	50	37	24	32	32	34
CNT	58	41	42	40	41	59	32	37	60	68	72	61	60	58	71	76	59	27	28	24	23	23	21	
LD	34	31	31	31	31	29	26	30	51	57	60	73	70	66	64	62	58	46	32	29	30	30	29	
hF2	MED	3 2 1 2 1																						
CNT																								
LD																								
hF	MED	290	265	290	260	250	240	250	250	220	220	220	225	220	220	210	220	220	210	240	250	250	300	
CNT	25	26	25	27	28	27	25	26	26	35	27	24	28	28	28	27	28	29	27	28	24	23	24	
LD	270	250	270	250	245	240	235	240	210	210	210	215	210	209	209	220	210	210	230	240	250	290	335	
M3000IF2	MED	285	295	290	290	305	325	310	345	350	335	340	365	340	335	335	345	340	315	315	310	305	280	270
CNT	20	21	22	19	25	22	23	24	21	22	21	21	24	24	24	26	21	17	22	17	19	23	18	
LD	280	285	280	280	295	305	295	300	335	340	325	325	355	335	325	325	330	360	350	325	335	325	285	
f6F1	MED	3 2 1 2 1																						
CNT																								
LD																								
f6E	MED	200	220	250	280	290	280	270	240	200														
CNT	7	23	22	20	24	25	25	19	15															
LD																								
h'E	MED	140	120	120	120	120	120	120	120	130														
CNT	8	23	24	24	26	22	15	13																
LD																								
f6Es	MED	28	26	27	27	28	28	27	27	26	250	27	26	28	28	28	28	28	29	28	28	28	28	
CNT																								

SWEEP 1.4 MC TO 15.0 MC IN 5 MINUTES, AUTOMATIC.
DECEMBER, 1961

AKITA, JAPAN
TABLE 29
139-37N, 140-11E
TIME 13:00

HOUR	TIME 13:00																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED	33	34	34	34	32	31	30	48	50	65	74	79	73	68	66	62	54	42	33	32	29	28	31
CNT	23	27	28	28	27	26	26	30	28	29	29	28	29	26	26	26	26	26	26	26	28	25	23	
LD	30	30	30	30	28	28	26	44	56	58	70	74	68	66	62	58	52	40	30	30	27	26	29	
hF2	MED	245 250 245																						
CNT	12	12 14 23 20 16 8 1																						
LD																								
hF	MED	300	295	295	170	240	265	240	220	240	240	240	230	230	240	245	245	250	300	300				
CNT	28	29	28	30	27	29	30	27	29	30	29	29	28	29	29	30	30	30	30	30	25	25	28	
LD																								
M3000IF2	MED	285	285	280	305	300	305	315	340	345	350	345	350	345	350	345	345	345	345	345	345	345	345	
CNT	23	27	28	28	27	28	29	30	29	29	29	28	29	29	29	29	29	29	29	29	28	25	22	
LD																								
f6F1	MED	360 360 370																						
CNT	4	4 367 360 350 2																						
LD																								
f6E	MED	220	270	290	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
CNT	6	17	19	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
LD																								
h'E	MED	140	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	
CNT	8	23	24	24	26	22	15	13																
LD																								
f6Es	MED	29	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
CNT																								

SWEEP 1.6 MC TO 10.0 MC IN 20 SECONDS.
DECEMBER, 1961

TABLE 33

FRANK, KENNETH

HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED CNT UO LO	58 24 19	52 18 14	54 14 16	64 18 18	68 16 18	75 18 18	82 22 20	82 20 17	88 18 18	92 20 17	94 18 18	98 18 18	98 17 14	98 18 18									
h'F2	MED CNT UO LO																							
h'F	MED CNT UO LO																							
MIS000IF2	MED CNT UO LO																							
f6FI	MED CNT UO LO																							
f6E	MED CNT UO LO																							
h'E	MED CNT UO LO																							
f6Ea	MED CNT UO LO																							

TABLE 34

LENN, JIMMIE, DON

HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED CNT UO LO	82 24 21	74 21 21	64 21 21	64 20 24	68 20 24	70 20 24	75 20 24	80 20 24	82 20 24														
h'F2	MED CNT UO LO																							
h'F	MED CNT UO LO																							
MIS000IF2	MED CNT UO LO																							
f6FI	MED CNT UO LO																							
f6E	MED CNT UO LO																							
h'E	MED CNT UO LO																							
f6Ea	MED CNT UO LO																							

TABLE 35

DEEMER, BOB

HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED CNT UO LO	74 22 18																						
h'F2	MED CNT UO LO																							
h'F	MED CNT UO LO																							
MIS000IF2	MED CNT UO LO																							
f6FI	MED CNT UO LO																							
f6E	MED CNT UO LO																							
h'E	MED CNT UO LO																							
f6Ea	MED CNT UO LO																							

TABLE 36

SWEEP 140 MC TO 240 MC IN 7 SECONDS

HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED CNT UO LO	50 34 31																						
h'F2	MED CNT UO LO																							
h'F	MED CNT UO LO																							
MIS000IF2	MED CNT UO LO																							
f6FI	MED CNT UO LO																							
f6E	MED CNT UO LO																							
h'E	MED CNT UO LO																							
f6Ea	MED CNT UO LO																							

TABLE 37

SWEEP 140 MC TO 1440 MC IN 1 MINUTE 30 SECONDS

HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6F2	MED CNT UO LO	50 34 31																						
h'F2	MED CNT UO LO																							
h'F	MED CNT UO LO																							
MIS000IF2	MED CNT UO LO																							
f6FI	MED CNT UO LO																							
f6E	MED CNT UO LO																							
h'E	MED CNT UO LO																							
f6Ea	MED CNT UO LO																							

HOURLY	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6 F2	MED	27	32	37	43	47	51	57	61	65	71	76	81	87	92	97	103	108	114	119	125	131	137	143
	UO	29	34	39	45	49	54	59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139
	LO																							
N F2	MED																							
	UO																							
	LO																							
N F	MED	27	32	37	43	47	51	57	61	65	71	76	81	87	92	97	103	108	114	119	125	131	137	143
	UO	29	34	39	45	49	54	59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139
	LO																							
M3000IF2	MED	27	32	37	43	47	51	57	61	65	71	76	81	87	92	97	103	108	114	119	125	131	137	143
	UO	29	34	39	45	49	54	59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139
	LO																							
f6 F1	MED																							
	UO																							
	LO																							
f6 E	MED																							
	UO																							
	LO																							
N E	MED																							
	UO																							
	LO																							
f6 Ea	MED																							
	UO																							
	LO																							

DECEMBER, 1961

SWEEP 14.6 MC TO 15.0 MC IN 18 SECONDS

TABLE

1354.3.3

1464JELI

CANBERRA, AUSTRALIA

HOURLY	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6 F2	MED	59	58	55	43	35	31	28	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
	UO	29	28	26	22	17	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0
	LO																							
N F2	MED																							
	UO																							
	LO																							
N F	MED																							
	UO																							
	LO																							
M3000IF2	MED	59	58	55	43	35	31	28	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
	UO	29	28	26	22	17	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0
	LO																							
f6 F1	MED																							
	UO																							
	LO																							
f6 E	MED																							
	UO																							
	LO																							
N E	MED																							
	UO																							
	LO																							
f6 Ea	MED																							
	UO																							
	LO																							

DECEMBER, 1961

SWEEP 14.0 MC TO 15.0 MC IN 10 SECONDS

HOURLY	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
f6 F2	MED	31	39	52	72	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336
	UO	29	34	43	54	65	76	87	98	109	120	131	142	153	164	175	186	197	208	219	230	241	252	263
	LO																							
N F2	MED																							
	UO																							
	LO																							
N F	MED																							
	UO																							
	LO																							
M3000IF2	MED	31	39	52	72	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336
	UO	29	34	43	54	65	76	87	98	109	120	131	142	153	164	175	186	197	208	219	230	241	252	263
	LO																							
f6 F1	MED																							
	UO																							
	LO																							
f6 E	MED																							
	UO																							
	LO																							
N E	MED																							
	UO																							
	LO																							
f6 Ea	MED																							
	UO																							
	LO																							

DECEMBER, 1961

SWEEP 14.0 MC TO 15.0 MC IN 3 MINUTE 15 SECONDS

TABLE

1354.3.3

TABLE 44

ESSEX, CANADA (55+64, 34-26)

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
f6 F2	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
n F2	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
n F	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
M3000IF2	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
f6 FI	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
f6 E	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
n E	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							
f6 Ea	MED CNT	31 31	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0							

SHEEP 1.0 MC TO 17.0 MC IN 16 SECONDS. NOVEMBER, 1961.

TABLE 48

JULIUSRUH/BOGEN, GERMANY (55+68, 13+6E)

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
f6 F2	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
n F2	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
n F	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
M3000IF2	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
f6 FI	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
f6 E	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
n E	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								
f6 Ea	MED CNT	28 28	26 26	24 24	22 22	20 20	18 18	16 16	14 14	12 12	10 10	8 8	6 6	4 4	2 2	0 0								

SHEEP 7.5 MC TO 20.0 MC IN 25 SECONDS. NOVEMBER, 1961.

TABLE 47

INVERNESS, SCOTLAND (65+64, 4+28)

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
f6 F2	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
n F2	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
n F	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
M3000IF2	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
f6 FI	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
f6 E	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
n E	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
f6 Ea	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											

SHEEP 0.65 MC TO 25.0 MC IN 5 MINUTES, AUTOMATIC. NOVEMBER, 1961.

TABLE 49

INVERNESS, SCOTLAND (57+64, 4+28)

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
f6 F2	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
n F2	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
n F	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
M3000IF2	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
f6 FI	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
f6 E	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
n E	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											
f6 Ea	MED CNT	21 21	19 19	17 17	15 15	13 13	11 11	9 9	7 7	5 5	3 3	1 1	0 0											

SHEEP 7.5 MC TO 25.0 MC IN 25 SECONDS. NOVEMBER, 1961.

TABLE 49

DE BILT, NETHERLANDS

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
f6F2	31	32	32	30	27	23	43	62	64	72	80	78	72	66	53	46	38	32	31	30	29	31	31	33
MED	29	28	27	28	28	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
CNT	28	28	28	25	21	21	22	27	37	61	68	73	65	58	50	43	35	28	25	24	26	29	29	
UQ	28	28	28	25	21	21	22	27	37	61	68	73	65	58	50	43	35	28	25	24	26	29	29	
nF2									250	220	230	240	230	225	250									
MED									1	2	5	13	16	9	1									
CNT																								
UQ																								
nF	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
MED	30	29	28	29	29	29	29	33	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
CNT	30	29	28	29	29	29	29	33	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
UQ	30	29	28	29	29	29	29	33	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
MIX0001F2	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	
MED	25	24	25	21	21	20	18	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
CNT	25	24	25	21	21	20	18	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
UQ	25	24	25	21	21	20	18	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
LO																								
f6F1																								
MED																								
CNT																								
UQ																								
f6E																								
MED																								
CNT																								
UQ																								
nE																								
MED																								
CNT																								
UQ																								
f6Es																								
MED																								
CNT																								
UQ																								

SHEEP 1+0 MC TO 18+0 MC IN 4 MINUTES.

NOVEMBER, 1961

TABLE 50

TOURBES, BELGIUM

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
f6F2	34	34	35	33	30	25	35	44	43	66	72	80	81	72	73	67	60	46	42	35	34	31	33	
MED	37	38	37	37	37	37	36	35	29	26	26	26	26	23	23	23	25	26	25	27	28	27	27	
CNT	37	38	37	37	37	37	36	35	29	26	26	26	26	23	23	23	25	26	25	27	28	27	27	
UQ	30	30	28	27	22	23	24	39	56	61	68	76	64	68	64	54	53	56	50	47	47	49	50	
nF2																								
MED									295	245	248	248	240											
CNT									1	8	8	8	3											
UQ										8	8	8	3											
nF	280	270	280	265	250	238	228	225	220	220	220	220	220	220	230	225	215	20	235	235	264	255	252	
MED	27	27	27	27	27	27	26	26	26	26	26	26	24	23	23	22	25	27	25	27	28	27	27	
CNT	27	27	27	27	27	27	26	26	26	26	26	26	24	23	23	22	25	27	25	27	28	27	27	
UQ	270	250	265	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
MIX0001F2	300	292	294	297	310	317	309	300	304	308	300	300	307	304	305	305	304	300	330	334	334	334	334	
MED	27	27	27	27	27	27	25	25	24	26	26	26	23	23	23	25	25	25	27	28	27	28	28	
CNT	27	27	27	27	27	27	25	25	24	26	26	26	23	23	23	25	25	25	27	28	27	28	28	
UQ	280	286	284	282	300	300	296	282	278	249	242	241	242	236	248	252	350	358	352	350	358	352	355	
LO																								
f6F1																								
MED																								
CNT																								
UQ																								
f6E																								
MED																								
CNT																								
UQ																								
nE																								
MED																								
CNT																								
UQ																								
f6Es																								
MED																								
CNT																								
UQ																								

SHEEP 1+0 MC TO 20+0 MC IN 3 MINUTES.

NOVEMBER, 1961

TABLE 51

GARCHY, FRANCE

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
f6F2	38	38	38	37	37	32	30	36	2	69	71	84	78	74	74	73	65	47	41	30	39	36	37	
MED	27	27	27	25	26	26	26	27	28	23	24	27	26	27	23	24	25	27	30	30	28	28	26	
CNT	27	27	27	25	26	26	26	27	28	23	24	27	26	27	23	24	25	27	30	30	28	28	26	
UQ	29	28	28	26	26	26	26	27	28	23	24	27	26	27	23									

TABLE 54

AMBEDDARO, [REDACTED] 123.0N, 73.4E

Table with 24 columns (00-23) and 4 rows (fF2, fF2, fF, fF). Columns represent hours of the day. Rows represent different observation types (MED, CNT, LO). Values are numerical counts.

SWEEP 3.6 MC TO 25.0 MC IN 5 MINUTES, AUTOMATIC. NOVEMBER, 1964.

TABLE 55

2300035, CNT, 125.0N, 131.45E

Table with 24 columns (00-23) and 4 rows (fF2, fF2, fF, fF). Columns represent hours of the day. Rows represent different observation types (MED, CNT, LO). Values are numerical counts.

SWEEP 1.0 MC TO 25.0 MC IN 27 SECONDS. NOVEMBER, 1964.

TABLE 56

LEOPOLDVILLE, CONGO 1.445S, 15.42E

Table with 24 columns (00-23) and 4 rows (fF2, fF2, fF, fF). Columns represent hours of the day. Rows represent different observation types (MED, CNT, LO). Values are numerical counts.

SWEEP 1.0 MC TO 20.0 MC IN 7 SECONDS. NOVEMBER, 1964.

TABLE 55

IBADAN, NIGERIA 7.46N, 3.9E

Table with 24 columns (00-23) and 4 rows (fF2, fF2, fF, fF). Columns represent hours of the day. Rows represent different observation types (MED, CNT, LO). Values are numerical counts.

SWEEP 1.0 MC TO 25.0 MC IN 27 SECONDS. NOVEMBER, 1964.

TABLE 57

HOBART, TASMANIA 142°35', 147°20'E

TIME 1500-F

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	
f6F2	MED CNT	300	35	35	34	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13
h'F2	MED CNT	23	24	23	25	25	21	21	19	18	17	16	16	16	16	16	16	16	16	16	16	16	16	16	16
h'F	MED CNT	300	320	325	300	310	330	345	355	320	340	340	320	325	320	325	335	330	325	310	325	310	300	310	310
MIS0000IF2	MED CNT	5	7	9	12	15	12	5	11	9	7	7	1	0	0	0	9	11	7	5	4	1	2	6	6
f6F1	MED CNT	440	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470
f6E	MED CNT	180	215	240	260	300	315	335	340	340	340	335	340	340	335	340	335	340	330	280	310	260	285	210	190
h'E	MED CNT	25	25	25	27	23	26	30	28	30	28	30	28	27	26	27	27	27	27	27	27	27	27	27	27
f6E*	MED CNT	41	46	42	52	45	44	43	40	34	37	28	26	26	27	27	27	27	27	27	27	27	27	27	27

SHEEP 140 MC TO 1640 MC IN 1 MINUTE 55 SECONDS.

NOVEMBER, 1961

TABLE 58

FALKLAND IS. 151°35', 57°54'W

TIME 60-0N

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	
f6F2	MED CNT	59	69	68	66	63	66	71	69	70	76	78	77	81	81	78	74	74	72	72	74	74	74	72	72
h'F2	MED CNT	23	21	21	20	29	30	29	26	28	27	26	27	25	26	28	28	27	30	30	30	28	24	28	28
h'F	MED CNT	278	280	280	260	285	300	305	305	285	285	290	295	300	310	310	320	330	335	335	310	295	275	275	275
MIS0000IF2	MED CNT	8	8	10	11	11	19	17	14	19	20	16	16	17	18	19	20	24	24	20	22	22	19	12	10
f6F1	MED CNT	440	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470	460	470
f6E	MED CNT	180	215	240	260	300	315	335	340	340	340	335	340	340	335	340	335	340	330	280	310	260	285	210	190
h'E	MED CNT	25	25	25	27	23	26	30	28	30	28	30	28	27	26	27	27	27	27	27	27	27	27	27	27
f6E*	MED CNT	41	46	42	52	45	44	43	40	34	37	28	26	26	27	27	27	27	27	27	27	27	27	27	27

SHEEP

NOVEMBER, 1961

TABLE 59

RESOLUTE BAY, CANADA 174°30', 94°30'W

TIME 60-0N

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	
f6F2	MED CNT	63	26	26	25	26	25	25	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
h'F2	MED CNT	67	48	47	49	50	46	50	52	55	54	53	53	53	57	55	55	55	56	53	53	50	50	48	44
h'F	MED CNT	360	240	250	260	270	270	250	230	230	220	220	220	230	230	230	230	230	240	250	240	245	240	250	250
MIS0000IF2	MED CNT	21	21	12	10	14	20	13	17	18	17	16	17	18	18	17	16	15	14	13	12	13	14	14	14
f6F1	MED CNT	340	370	380	390	390	380	370	340	350	350	340	335	335	330	335	330	320	280	300	290	280	280	280	280
f6E	MED CNT	170	180	180	210	240	240	240	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
h'E	MED CNT	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
f6E*	MED CNT	41	46	42	52	45	44	43	40	34	37	28	26	26	27	27	27	27	27	27	27	27	27	27	27

SHEEP 145 MC TO 1640 MC IN 15 SECONDS.

SEPTEMBER, 1961

TABLE 60

GODHAVN, GREENLAND 169°30', 53°50'N

TIME 65-0N

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	
f6F2	MED CNT	16	11	10	5	5	4	6	7	6	9	15	15	13	13	13	12	16	21	20	21	24	15	16	19
h'F2	MED CNT	30	40	39	38	36	30	28	44	50	58	60	60	50	50	55	55	56	55	52	53	49	48	44	44
h'F	MED CNT	41	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
MIS0000IF2	MED CNT	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310
f6F1	MED CNT	340	370	380	390	390	380	370	340	350	350	340	335	335	330	335	330	320	280	300	290	280	280	280	280
f6E	MED CNT	170	180	180	210	240	240	240	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
h'E	MED CNT	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
f6E*	MED CNT	41	46	42	52	45	44	43	40	34	37	28	26	26	27	27	27	27	27	27	27	27	27	27	27

SHEEP 144 MC TO 1640 MC IN 15 SECONDS.

SEPTEMBER, 1961

TABLE 64

HOUR	TIME																							
	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 40	38	36	34	31	34	46	54	57	61	64	67	65	59	58	65	64	68	69	68	61	57	44	42
	CHT	46	43	41	38	36	38	48	57	61	71	72	71	69	71	70	70	70	70	70	68	59	40	47
	LO	37	35	33	31	30	30	48	52	58	60	64	61	63	60	61	60	61	64	61	56	43	40	36
fF2	MED 325	280	370	280	300	300	290	290	290	290	280	280	280	260	260	260	260	260	260	260	270	285	300	
	CHT	2	12	15	25	35	24	23	22	17	13	6	2											
	LO																							
fF	MED 310	300	305	300	290	265	250	230	230	225	215	215	220	225	225	230	240	260	260	260	270	285	300	
	CHT	28	28	28	28	27	27	27	27	26	26	27	27	27	26	30	30	30	29	29	30	30	27	
	LO																							
M13000/F2	MED 280	275	270	260	290	305	325	325	320	325	315	315	320	315	310	315	315	315	310	305	305	295	290	
	CHT	28	28	27	28	26	27	27	27	29	29	30	30	30	29	30	30	30	29	30	29	30	30	
	LO																							
f6FI	MED 370	390	420	440	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	
	CHT	2	9	12	21	23	20	22	19	9	4	20												
	LO																							
f6E	MED 200	250	280	300	310	320	330	330	310	290	260	220	260	220	25	13								
	CHT	21	23	28	24	26	24	26	22	24	28	25	13											
	LO																							
fE	MED 128	120	120	120	120	120	120	120	120	120	124	E												
	CHT	18	18	19	22	21	23	19	18	19	18	9												
	LO																							
f6Ei	MED 370	390	420	440	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	
	CHT	2	9	12	21	23	20	22	19	9	4	20												
	LO																							

SEPTEMBER, 1961

SWEET 14.8 MC TO 18.0 MC IN 4 MINUTES.

SEPTEMBER, 1961

SWEET 14.0 MC TO 17.0 MC IN 15 SECONDS.

TABLE 65

HOUR	TIME																							
	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	37	32	34	35	34	38	53	46	52	54	56	60	60	63	64	64	62	58	45	40	40	33	34
	CHT	43	41	37	36	36	44	45	51	55	40	42	58	67	68	70	69	62	54	46	42	35	35	35
	LO	34	34	28	27	30	31	34	40	44	46	47	50	51	53	54	57	54	50	42	38	31	34	35
fF2	MED 320	300	330	350	330	330	330	325	305	300														
	CHT	3	12	20	22	24	27	28	28	24	15	1												
	LO																							
fF	MED 330	270	305	330	350	310	325	285	240	250	220	211	220	220	230	230	235	260	300	300	295	270	295	
	CHT	19	15	18	24	14	15	14	13	10	15	17	22	22	25	25	23	20	27	26	23	21	21	
	LO																							
M13000/F2	MED 300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
	CHT	2	3	1	3	5	11	15	19	21	20	25	26	26	24	23	18	14	7	4	6	5		
	LO																							
f6FI	MED 410	410	425	430	430	420	420	400	370															
	CHT	2	5	14	22	27	28	28	26	18	10	5												
	LO																							
f6E	MED 260	300	310	310	320	320	300	300	260	240	220	180												
	CHT	1	1	1	3	3	6	10	17	21	22	24	22	20	17	12	5							
	LO																							
fE	MED 260	280	275	275	275	275	280	290	290	285	275	275	270	260										
	CHT	1	1	1	1	1	1	1	1	1	1	1	1	1										
	LO																							
f6Ei	MED 410	410	425	430	430	420	420	400	370															
	CHT	2	5	14	22	27	28	28	26	18	10	5												
	LO																							

SEPTEMBER, 1961

SWEET 14.0 MC TO 17.0 MC IN 3 MINUTES.

TABLE 66

HOUR	TIME																							
	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 40	40	38	35	32	30	41	50	55	59	64	63	64	66	67	65	65	66	68	68	64	57	47	42
	CHT	29	28	28	28	24	28	30	27	28	25	28	28	28	27	28	29	27	24	26	26	28	26	27
	LO																							
fF2	MED 260	280	275	270	250	265	330	220	220	205	200	200	205	220	220	220	225	240	250	240	245	245	250	
	CHT	29	28	25	28	24	28	26	27	24	22	22	22	24	20	24	23	26	23	30	28	24	34	
	LO																							
M13000/F2	MED 280	285	275	285	285	295	325	330	325	320	330	330	320	315	315	320	315	315	310	310	300	290	295	
	CHT	29	28	25	28	26	26	27	27	27	26	24	27	26	26	26	27	26	19	19	22	27	25	
	LO																							
f6FI	MED 390	390	420	440	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	
	CHT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	LO																							
f6E	MED 160	180	230	265	295	320	330	330	330	325	305	275	240	190										
	CHT	2	22	24	19	17	15	21	20	18	19	20	19	11										
	LO																							
fE	MED 120	115	115	110	110	105	105	105	105	110	110	110	120	125										
	CHT	2	23	27	27	27	21	21	17	17														

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
16F2	MED 42	42	40	33	34	31	46	55	81	68	68	58	67	68	69	68	68	71	69	70	62	53	65	42
CNT	21	26	21	17	17	28	24	20	45	26	28	27	27	26	27	26	24	20	24	16	16	20	23	22
LD																								
16F2	MED 370	280	275	270	280	280	240	270	270	280	280	240	270											
CNT	13	20	21	26	22	20	20	12																
LD																								
16F2	MED 250	260	245	250	250	345	335	335	330	320	325	320	320	320	320	320	320	320	320	320	320	320	320	320
CNT	14	14	14	14	14	17	18	18	23	23	23	22	22	22	22	22	22	22	22	22	22	22	22	22
LD																								
16F2	MED 185	240	280	300	300	325	330	330	325	295	270	220												
CNT	15	19	25	26	22	24	17	19	18	23	20	20												
LD																								
16E	MED 195	105	100	100	100	100	105	110																
CNT	24	28	22	23																				
LD																								
16E	MED 30	30	29	29	29	40	22	27	30	33	27	37	37	37	34	35	31	26	26	27	24	18	20	
CNT	30	30	29	29	29	40	22	27	30	33	27	37	37	37	34	35	31	26	26	27	24	18	20	
LD																								

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
16F2	MED 52	58	51	43	35	34	56	76	78	83	76	114	132	140	139	141	138	123	96	90	84	74	74	66
CNT	74	74	73	65	50	25	26	27	27	26	26	26	26	26	26	26	27	27	27	27	28	28	27	24
LD																								
16F2	MED 230	265	231	224	220	230	240	225	215	235	218	200	175	150	150	150	150	150	150	150	150	150	150	150
CNT	24	24	23	22	22	20	25	27	25	26	23	21	21	21	21	21	21	21	21	21	21	21	21	21
LD																								
16F2	MED 230	265	231	224	220	230	240	225	215	235	218	200	175	150	150	150	150	150	150	150	150	150	150	150
CNT	24	24	23	22	22	20	25	27	25	26	23	21	21	21	21	21	21	21	21	21	21	21	21	21
LD																								
16E	MED 210	265	231	224	220	230	240	225	215	235	218	200	175	150	150	150	150	150	150	150	150	150	150	150
CNT	24	24	23	22	22	20	25	27	25	26	23	21	21	21	21	21	21	21	21	21	21	21	21	21
LD																								
16E	MED 210	265	231	224	220	230	240	225	215	235	218	200	175	150	150	150	150	150	150	150	150	150	150	150
CNT	24	24	23	22	22	20	25	27	25	26	23	21	21	21	21	21	21	21	21	21	21	21	21	21
LD																								
16E	MED 210	265	231	224	220	230	240	225	215	235	218	200	175	150	150	150	150	150	150	150	150	150	150	150
CNT	24	24	23	22	22	20	25	27	25	26	23	21	21	21	21	21	21	21	21	21	21	21	21	21
LD																								

TABLE 105.4
INGREDIENTS, CONTINUED

Table with 24 columns (00-23) and multiple rows for different chemical components like f6F2, nF2, nF, M3000IF2, f6F1, f6E, nE, f6Es. Each row contains numerical values for each hour.

SLEEP 143 N670 2140 MC IN 18 (CONT'D)

TABLE 105.5
INGREDIENTS, CONTINUED

Table with 24 columns (00-23) and multiple rows for different chemical components like f6F2, nF2, nF, M3000IF2, f6F1, f6E, nE, f6Es. Each row contains numerical values for each hour.

SLEEP 143 N670 2140 MC IN 18 (CONT'D)

TABLE 105.6
INGREDIENTS, CONTINUED

Table with 24 columns (00-23) and multiple rows for different chemical components like f6F2, nF2, nF, M3000IF2, f6F1, f6E, nE, f6Es. Each row contains numerical values for each hour.

SLEEP 143 N670 2140 MC IN 18 (CONT'D)

TABLE 106
BOLE STATION, ANTISETIC

Table with 24 columns (00-23) and multiple rows for different chemical components like f6F2, nF2, nF, M3000IF2, f6F1, f6E, nE, f6Es. Each row contains numerical values for each hour.

SLEEP 143 N670 2140 MC IN 18 (CONT'D)

TABLE 107
BOLE STATION, ANTISETIC

Table with 24 columns (00-23) and multiple rows for different chemical components like f6F2, nF2, nF, M3000IF2, f6F1, f6E, nE, f6Es. Each row contains numerical values for each hour.

SLEEP 143 N670 2140 MC IN 18 (CONT'D)

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	
f6F2	MED 27 30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
n'F2	MED 30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
n'F	MED 290	275	265	310	345	350	250	335	320	210	205	200	200	200	200	200	210	260	270	305	320	275	255	275	
MIS0001F2	MED 295	310	315	320	330	335	330	335	315	305	265	250	250	250	265	265	265	265	265	310	310	255	290	285	305
f6FI	MED 485	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	
f6E	MED 195	280	330	360	380	380	380	380	320	22	22	22	22	22	22	22	22	22	22	310	260	160			
n'E	MED 30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
f6E*	MED 31	52	90	91	31	31	52	26	28	260	29	30	49	51	50	30	56	24	29	30	28	29	30	30	

SLEEP AUGUST, 1961

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
f6F2	MED 52	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
n'F2	MED 31	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
n'F	MED 280	280	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
MIS0001F2	MED 280	275	275	285	290	295	320	320	320	315	315	305	310	305	305	310	305	305	305	305	305	305	305	305
f6FI	MED 430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
f6E	MED 220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
n'E	MED 110	105	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
f6E*	MED 27	24	25	25	23	23	31	39	41	44	43	43	42	41	38	39	37	36	35	31	32	31	26	27

SLEEP AUGUST, 1961

TABLE 80

CARETONN, UNION OF S. AFRICA 134-135, 18-JE1																								
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
f6F2	MED 26	27	28	29	30	29	30	28	28	28	29	29	29	29	29	29	29	29	29	29	29	29	29	29
n'F2	MED 250	255	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
n'F	MED 240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
MIS0001F2	MED 290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290	290
f6FI	MED 310	410	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
f6E	MED 190	240	300	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330	330
n'E	MED 15	14	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
f6E*	MED 29	30	29	29	30	30	30	30	30	30	30	30	270	27	27	27	23	28	28	26	29	29	30	29

SLEEP 17.0 MC TO 17.0 MC IN 7 SECONDS. AUGUST, 1961

TABLE 79

JOHANNESBURG, UNION OF S. AFRICA 126-127, 29-JE3																								
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
f6F2	MED 28	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
n'F2	MED 215	260	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
n'F	MED 240	230	250	270	240	245	230	245	210	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
MIS0001F2	MED 300	300	300	310	305	295	310	350	325	315	320	310	305	310	305	310	305	305	305	305	305	305	305	305
f6FI	MED 420	460	470	470	470	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
f6E	MED 190	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	MED 31	12	10	11	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
f6E*	MED 25	26	28	28	21	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28

SLEEP 14.0 MC TO 15.0 MC IN 1 MINUTE 30 SECONDS. AUGUST, 1961

TABLE 86

126-3N, 127-8E1

ORINAMA I.

Table with columns for HOUR (00-23) and rows for fF2, h'F2, h'F, M3000F2, f6F1, f6E, h'E, f6Ea. Includes sub-rows for MED, CMT, and LO. Data values are numerical measurements across 24 hours.

JUNE, 1961

SWEEP 1-0 MC TO 35-0 MC IN 27 SECONDS

TIME 135-0E

TABLE 88

126-3N, 127-8E1

ORINAMA I.

Table with columns for HOUR (00-23) and rows for fF2, h'F2, h'F, M3000F2, f6F1, f6E, h'E, f6Ea. Includes sub-rows for MED, CMT, and LO. Data values are numerical measurements across 24 hours.

JUNE, 1961

SWEEP 1-0 MC TO 35-0 MC IN 27 SECONDS

TABLE 85

139-35S, 150-27E1

TOWNSVILLE, AUSTRALIA

Table with columns for HOUR (00-23) and rows for fF2, h'F2, h'F, M3000F2, f6F1, f6E, h'E, f6Ea. Includes sub-rows for MED, CMT, and LO. Data values are numerical measurements across 24 hours.

JULY, 1961

SWEEP 1-0 MC TO 18-0 MC IN 1 MINUTE 58 SECONDS

TIME 135-0E

TABLE 87

139-35S, 150-27E1

LESDOEVILLE, CONZ

Table with columns for HOUR (00-23) and rows for fF2, h'F2, h'F, M3000F2, f6F1, f6E, h'E, f6Ea. Includes sub-rows for MED, CMT, and LO. Data values are numerical measurements across 24 hours.

JUNE, 1961

SWEEP 1-0 MC TO 25-0 MC IN 2 SECONDS

TABLE 89

LEPOLVILLE, CONGO I 4455- 15+2E1

HOUR	TIME 0-1																								
	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	60	44	36	28	24	43	68	80	88	51	124	111	117	121	122	124	126	127	133	U				
	CNT	15	18	21	22	23	28	16	23	22	24	20	22	21	29	28	24	18	14	11	4	1	6	10	13
	LD	U																							
16 F2	MED																								
	CNT																								
	LD																								
16 F	MED																								
	CNT																								
	LD																								
M130001F2	MED	308	312	310	305	315	315	320	303	295	282	279	275	287	270	272	276	280	297	U					
	CNT	13	18	21	22	21	28	16	23	22	24	20	23	21	27	26	24	18	14	10	4	5	5	8	13
	LD	U																							
16 F1	MED																								
	CNT																								
	LD																								
16 E	MED																								
	CNT																								
	LD																								
16 E	MED																								
	CNT																								
	LD																								

SWEEP 1-0 MC TO 20-0 MC IN 7 SECONDS.

MAY, 1961

APRIL, 1961

TABLE 90

LEPOLVILLE, CONGO I 4455- 15+2E1

HOUR	TIME 0-1																								
	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	66	42	37	29	24	62	70	84	92	105	110	120	127	130	131	137	136	127	143	U				
	CNT	10	14	14	14	15	16	7	13	17	11	9	14	15	17	13	16	15	11	6	2	2	3	4	
	LD	U																							
16 F2	MED																								
	CNT																								
	LD																								
16 F	MED																								
	CNT																								
	LD																								
M130001F2	MED	304	302	300	316	327	313	320	299	281	263	250	263	263	263	263	264	268	273	276	U				
	CNT	10	14	14	14	15	16	7	13	17	12	9	14	15	17	13	16	15	11	6	2	2	3	4	
	LD	U																							
16 F1	MED																								
	CNT																								
	LD																								
16 E	MED																								
	CNT																								
	LD																								
16 E	MED																								
	CNT																								
	LD																								

SWEEP 1-0 MC TO 20-0 MC IN 7 SECONDS.

APRIL, 1961

TABLE 91

WARSAW, POLAND 152+2N, 21+2E3

HOUR	TIME 15-0																								
	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	30	30	30	30	28	26	34	61	78	85	83	85	65	77	74	55	52	39	34	32	29	30	30	
	CNT	27	29	35	35	50	17	27	39	27	36	27	26	27	28	28	30	28	28	23	23	21	18	21	
	LD	U																							
16 F2	MED																								
	CNT																								
	LD																								
16 F	MED																								
	CNT																								
	LD																								
M130001F2	MED	186	240	480	480	390	286	390	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	
	CNT	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
	LD	U																							
16 F1	MED																								
	CNT																								
	LD																								
16 E	MED																								
	CNT																								
	LD																								

SWEEP 1-0 MC TO 18-0 MC IN 27 SECONDS.

JANUARY, 1961

JANUARY, 1961

TABLE 92

OKINAWA I, 126+3N, 127+8E3

HOUR	TIME 135-0E																								
	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	43	41	39	34	27	26	30	36	75	91	103	114	124	124	125	124	114	108	84	74	76	69	52	44
	CNT	31	31	31	30	39	35	17	28	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
	LD	U																							
16 F2	MED																								
	CNT																								
	LD																								
16 F	MED																								
	CNT																								
	LD																								
M130001F2	MED	247	257	257	237	237	237	237	237	237	237	237	237	237	237	237	237	237	237	237	237	237	237	237	
	CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
	LD	U																							
16 F1	MED																								
	CNT																								
	LD																								
16 E	MED																								
	CNT																								
	LD																								

SWEEP 1-0 MC TO 20-0 MC IN 27 SECONDS.

JANUARY, 1961

TIME 12:00

1961 JANUARY 22

TABLE 34

TABLE 35

TABLE 36

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	
f0F2 MED CNT U LO																									
h1F2 MED CNT U LO																									
h1F MED CNT U LO																									
MIX000IF2 MED CNT U LO																									
f0F1 MED CNT U LO																									
f0E MED CNT U LO																									
h1E MED CNT U LO																									
f0Es MED CNT U LO																									

SHEEP 1:00 MC TO 25:00 MC IN 15 SECONDS.

1961 JANUARY 23

TABLE 35

SHEEP 1:00 MC TO 25:00 MC IN 15 SECONDS.

1961 JANUARY 24

TABLE 36

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	
f0F2 MED CNT U LO																									
h1F2 MED CNT U LO																									
h1F MED CNT U LO																									
MIX000IF2 MED CNT U LO																									
f0F1 MED CNT U LO																									
f0E MED CNT U LO																									
h1E MED CNT U LO																									
f0Es MED CNT U LO																									

SHEEP 1:00 MC TO 25:00 MC IN 15 SECONDS.

1961 JANUARY 25

TABLE 36

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	
f0F2 MED CNT U LO																									
h1F2 MED CNT U LO																									
h1F MED CNT U LO																									
MIX000IF2 MED CNT U LO																									
f0F1 MED CNT U LO																									
f0E MED CNT U LO																									
h1E MED CNT U LO																									
f0Es MED CNT U LO																									

SHEEP 1:00 MC TO 25:00 MC IN 15 SECONDS.

1961 DECEMBER 19

TABLE 36

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	
f0F2 MED CNT U LO																									
h1F2 MED CNT U LO																									
h1F MED CNT U LO																									
MIX000IF2 MED CNT U LO																									
f0F1 MED CNT U LO																									
f0E MED CNT U LO																									
h1E MED CNT U LO																									
f0Es MED CNT U LO																									

SHEEP 1:00 MC TO 25:00 MC IN 15 SECONDS.

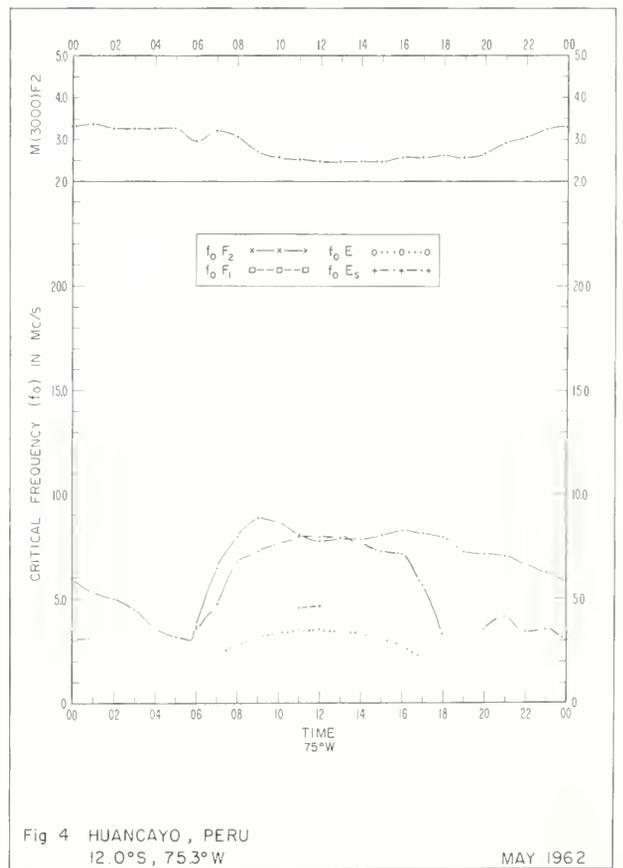
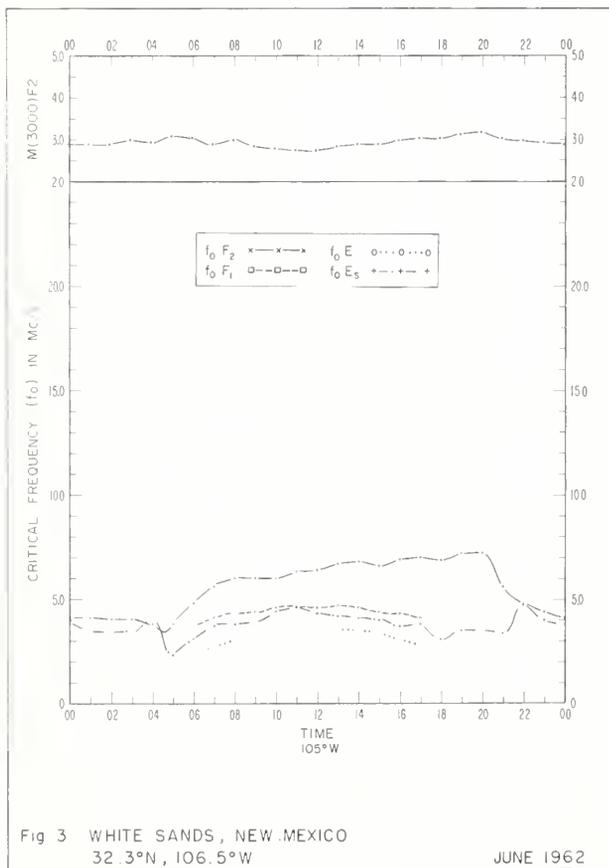
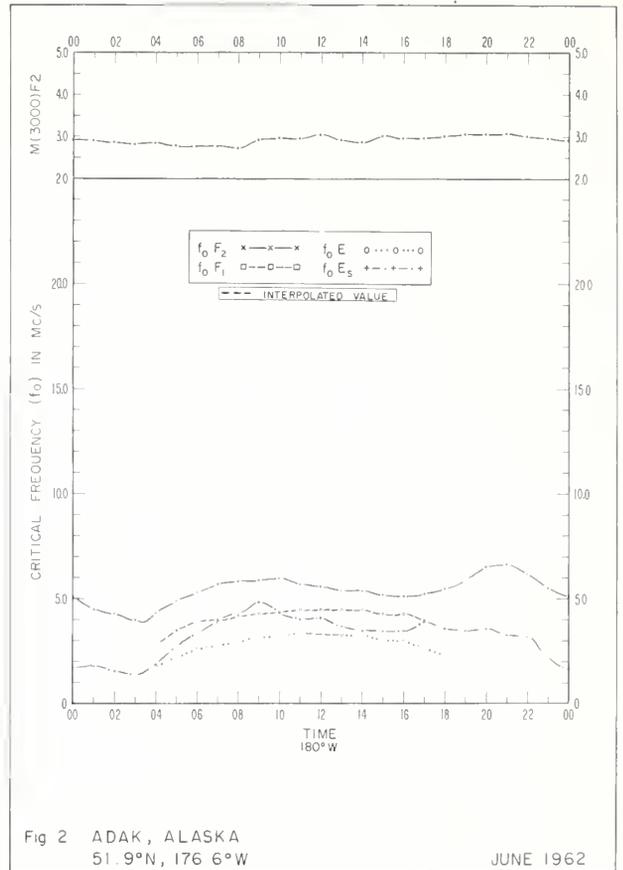
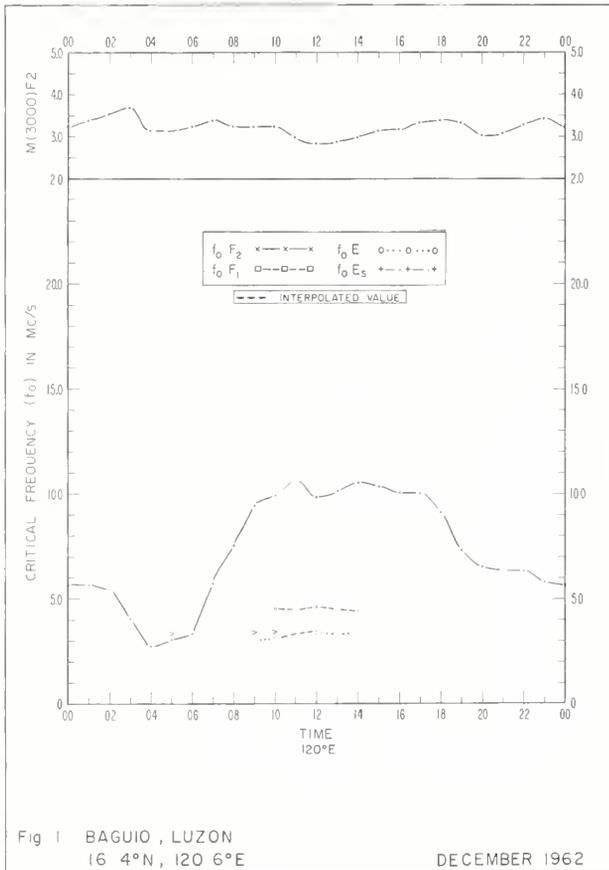
1961 DECEMBER 19

TABLE 36

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	
f0F2 MED CNT U LO																									
h1F2 MED CNT U LO																									
h1F MED CNT U LO																									
MIX000IF2 MED CNT U LO																									
f0F1 MED CNT U LO																									
f0E MED CNT U LO																									
h1E MED CNT U LO																									
f0Es MED CNT U LO																									

SHEEP 1:00 MC TO 25:00 MC IN 15 SECONDS.

1961 DECEMBER 19



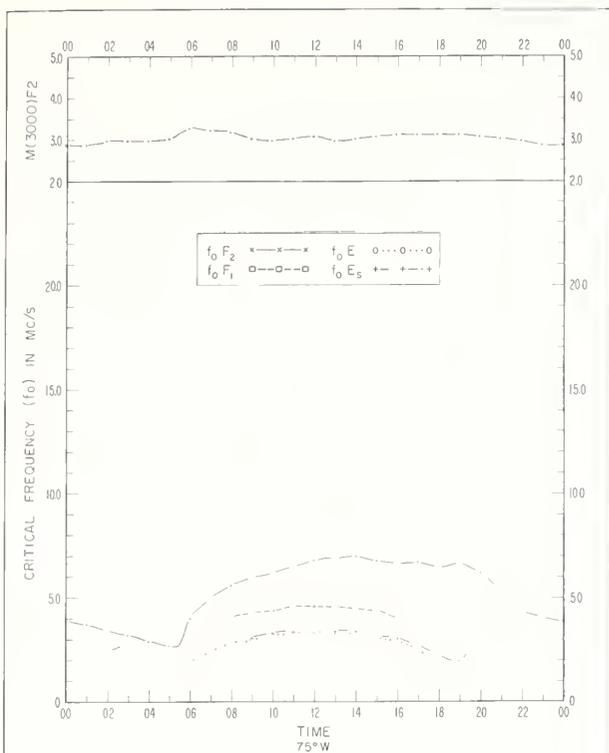


Fig 5 WASHINGTON, D C
38 7°N, 77 1°W

APRIL 1962

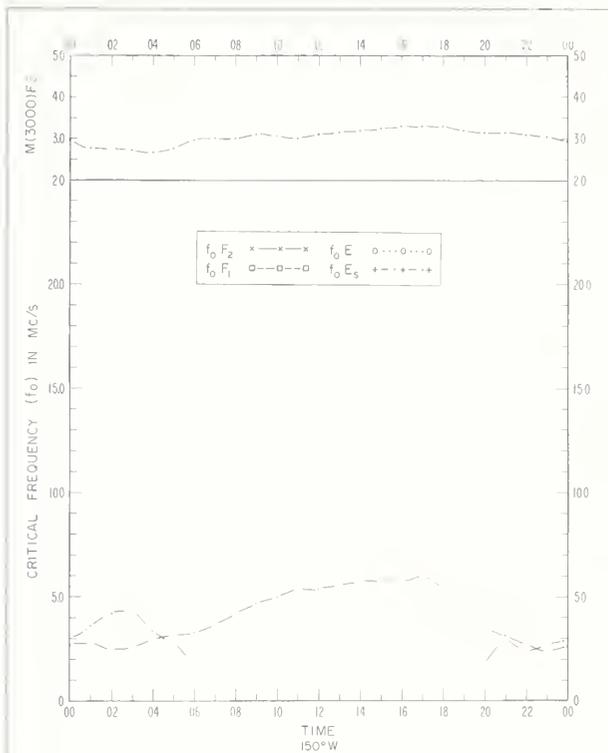


Fig 6 FAIRBANKS, ALASKA
64 9°N, 147.8°W

MARCH 1962

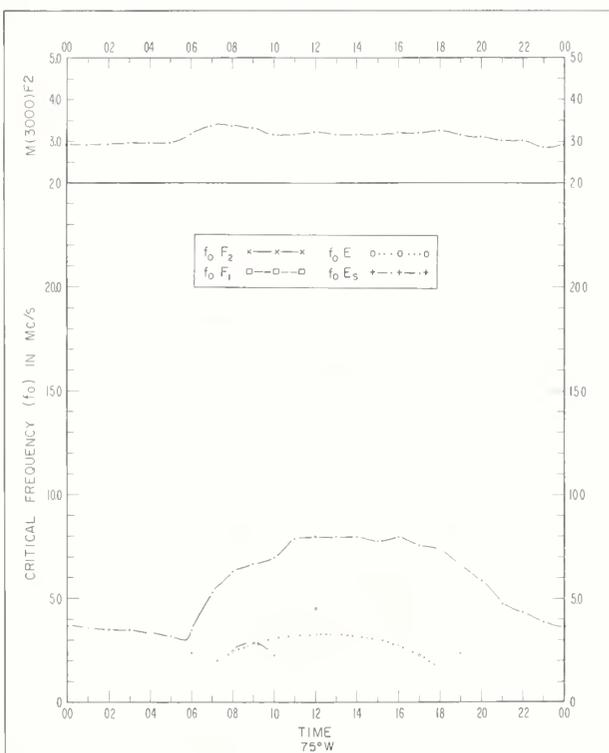


Fig 7 WASHINGTON, D. C.
38. 7°N, . 77 1°W

MARCH 1962

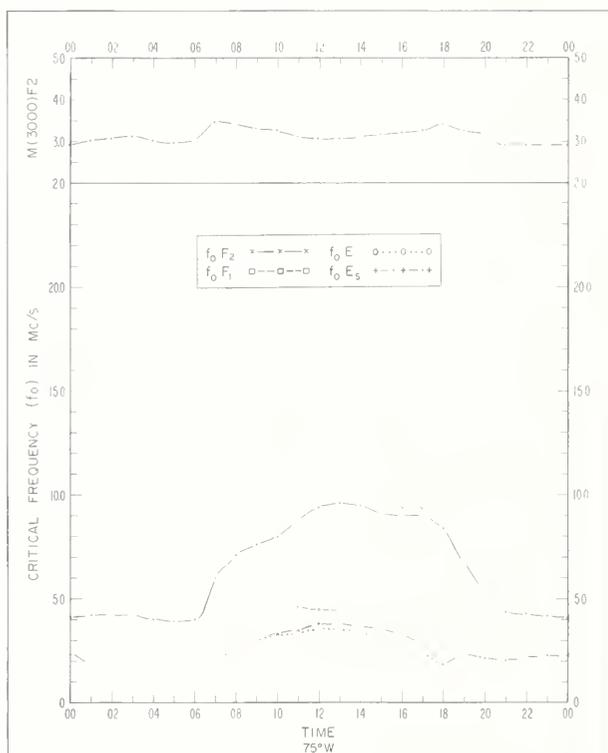
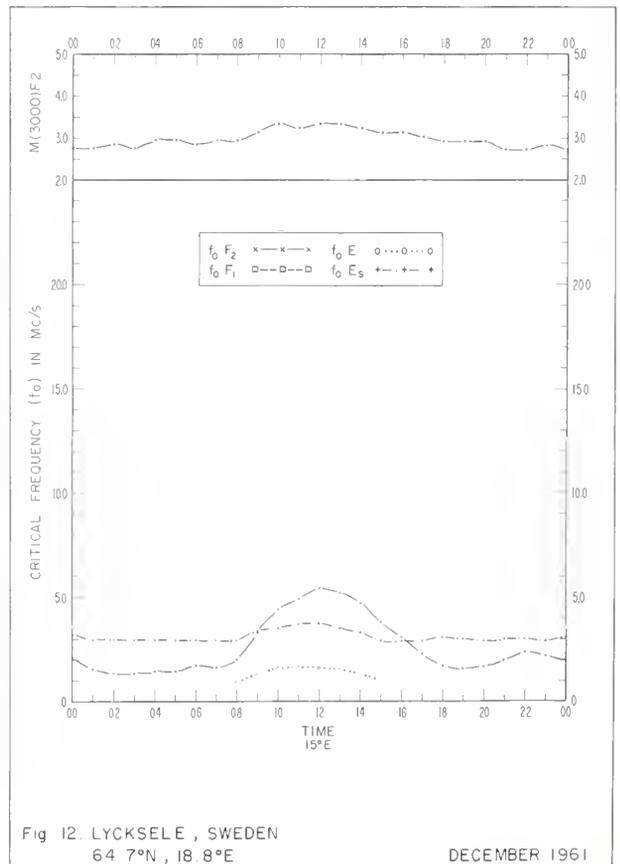
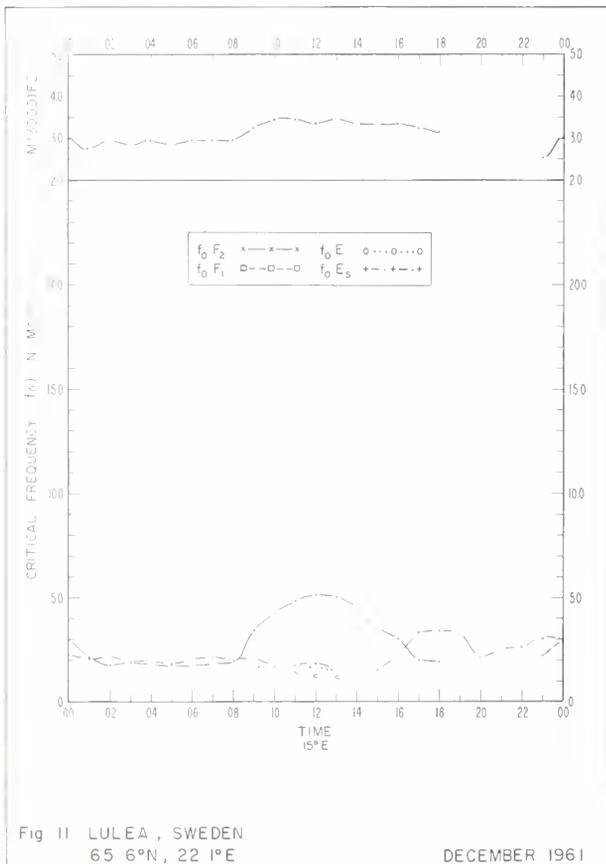
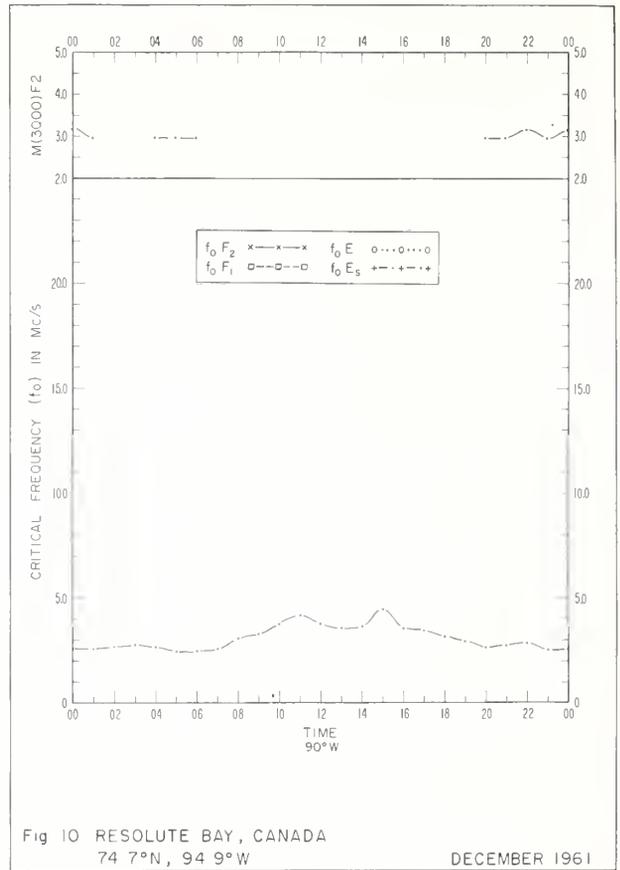
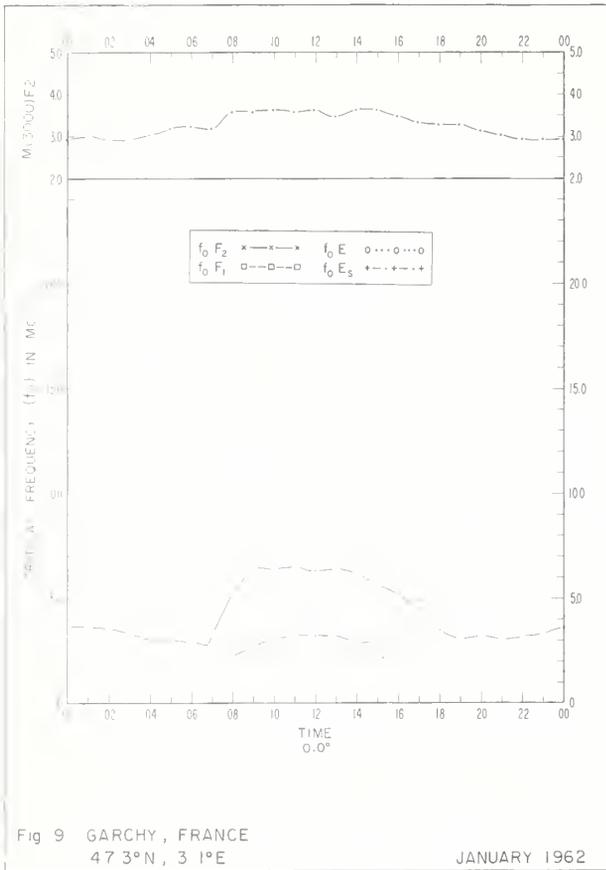


Fig 8 GRAND BAHAMA I
26 6°N, 78 2°W

MARCH 1962



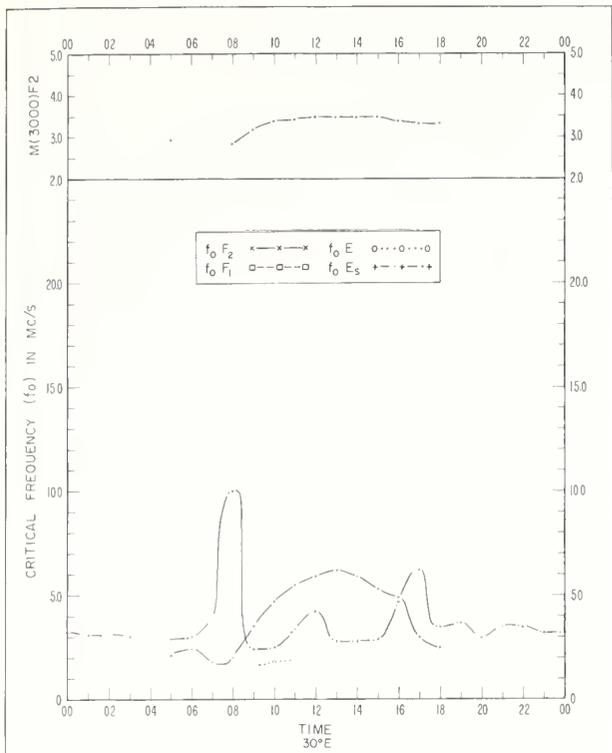


Fig. 13. NURMIJARVI, FINLAND
60.5°N, 24.6°E

DECEMBER 1961

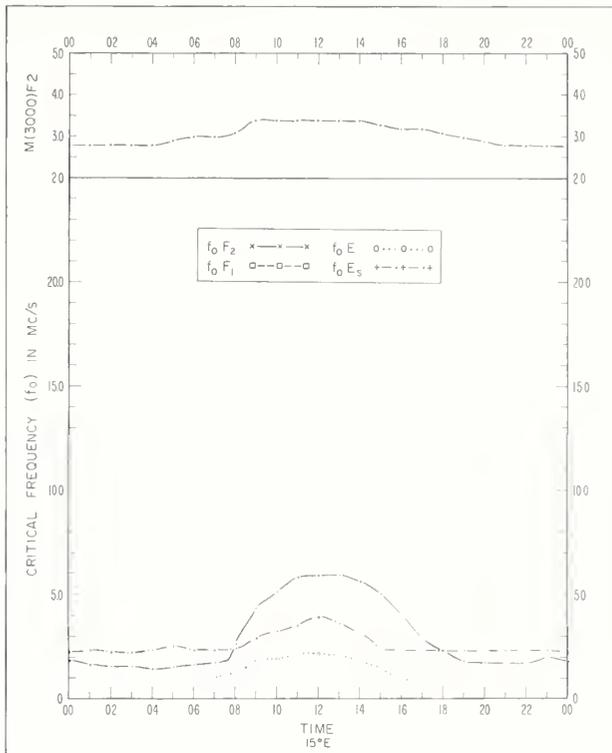


Fig. 14. UPPSALA, SWEDEN
59.8°N, 17.6°E

DECEMBER 1961

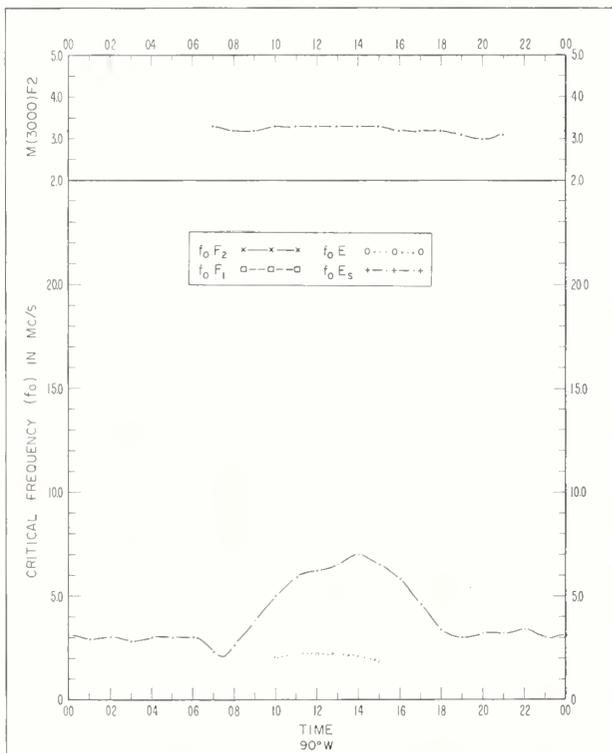


Fig. 15. CHURCHILL, CANADA
58.8°N, 94.2°W

DECEMBER 1961

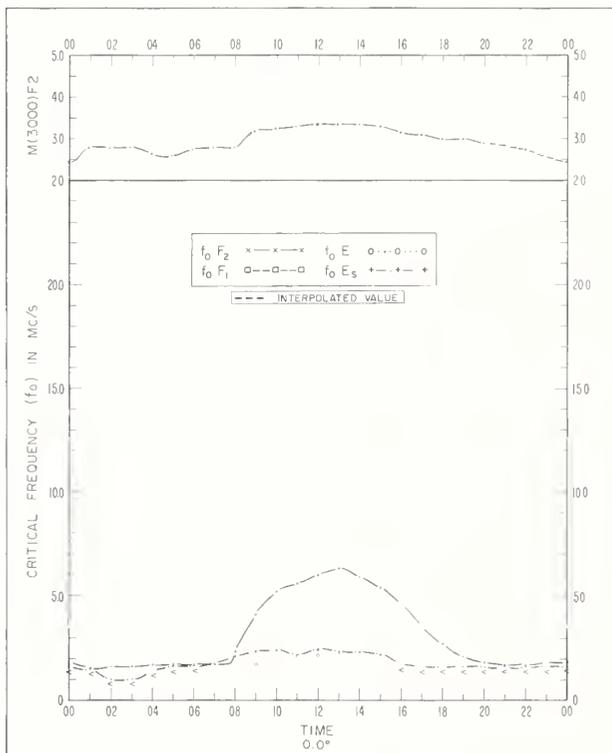
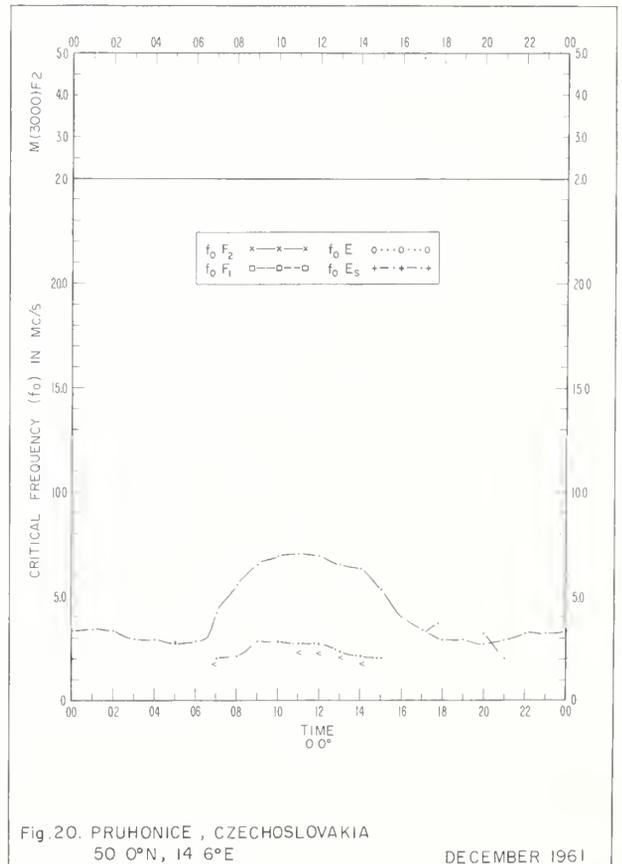
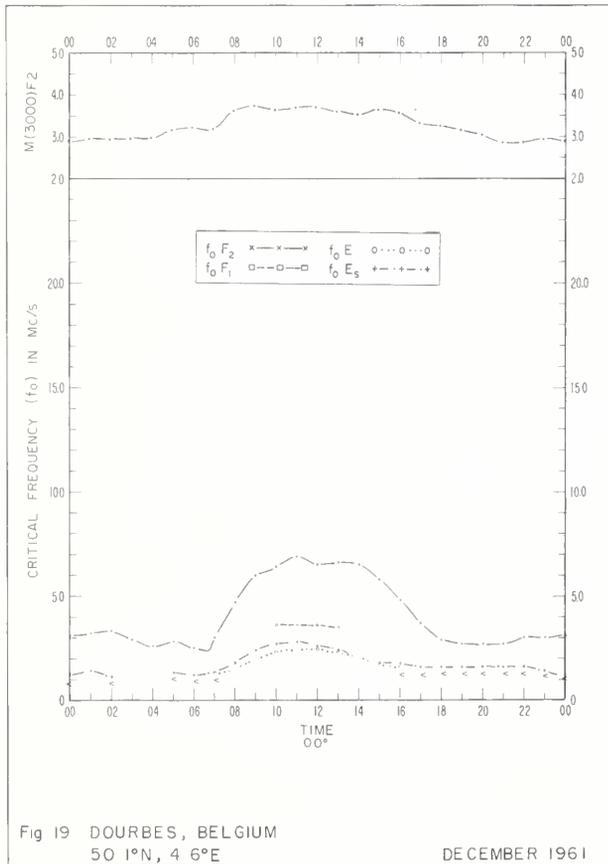
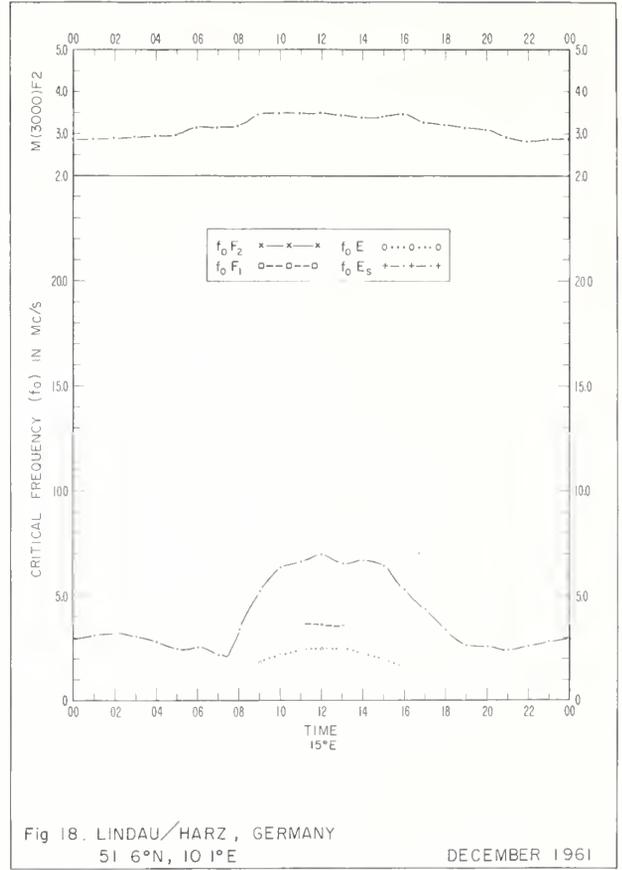
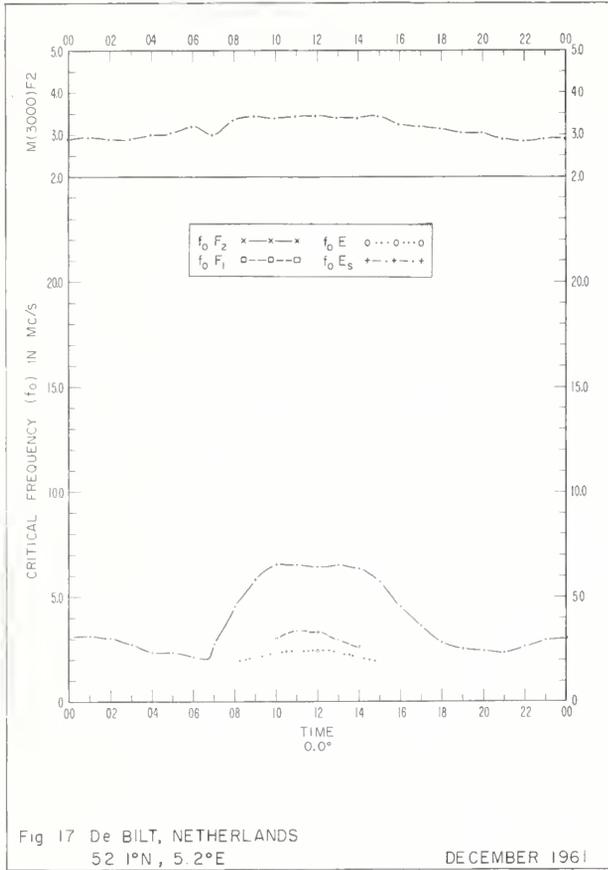


Fig. 16. INVERNESS, SCOTLAND
57.4°N, 4.2°W

DECEMBER 1961



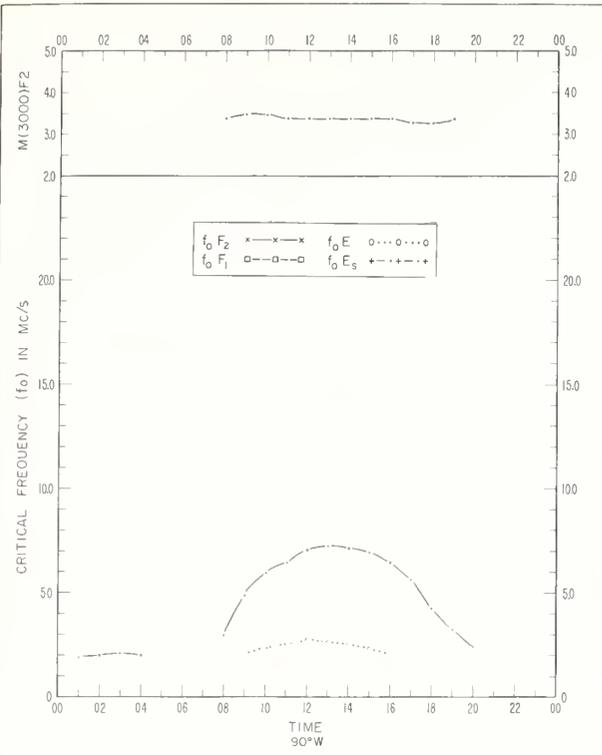


Fig 21. WINNIPEG, CANADA
49.9°N, 97.4°W
DECEMBER 1961

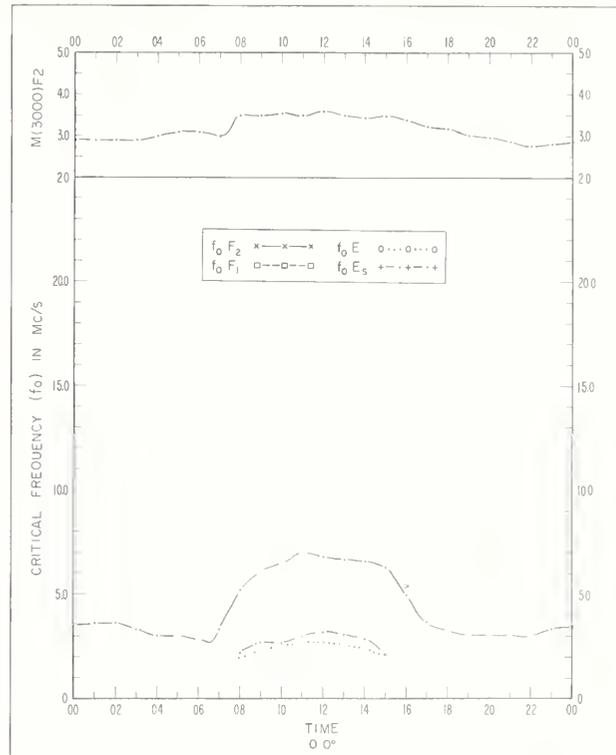


Fig 22. GARCHY, FRANCE
47.3°N, 3.1°E
DECEMBER 1961

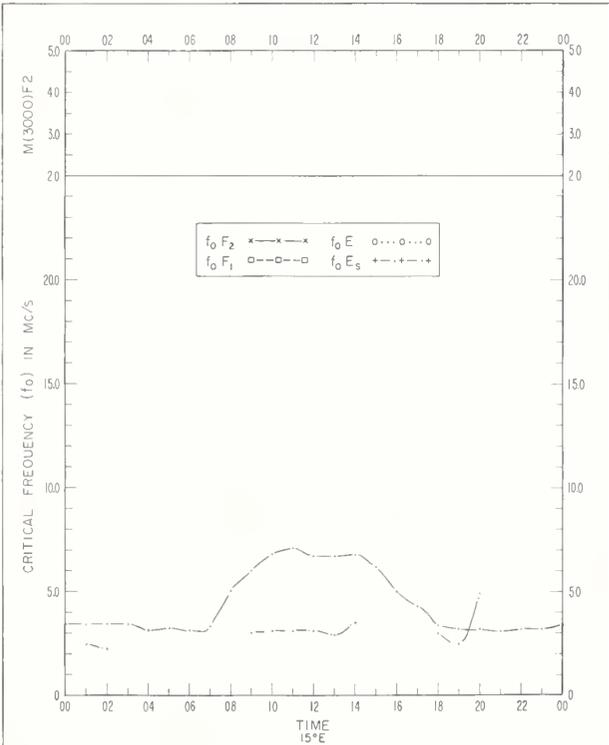


Fig. 23. GRAZ, AUSTRIA
47.1°N, 15.5°E
DECEMBER 1961

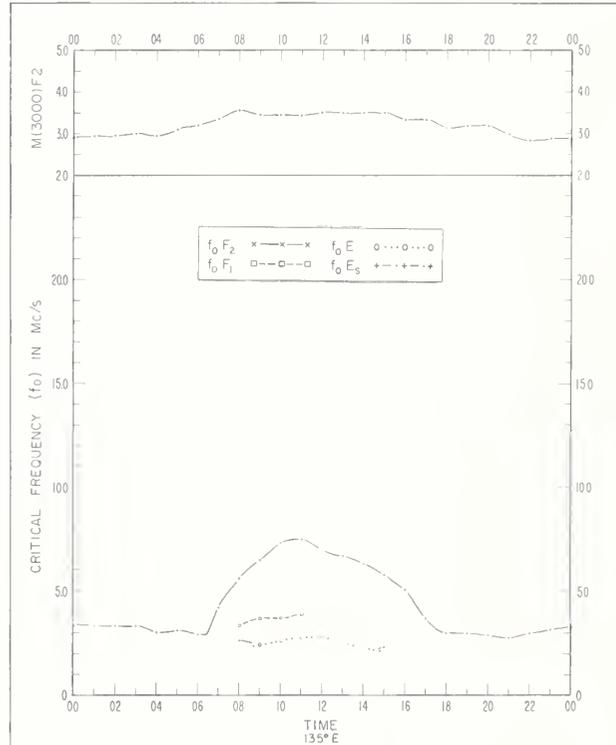
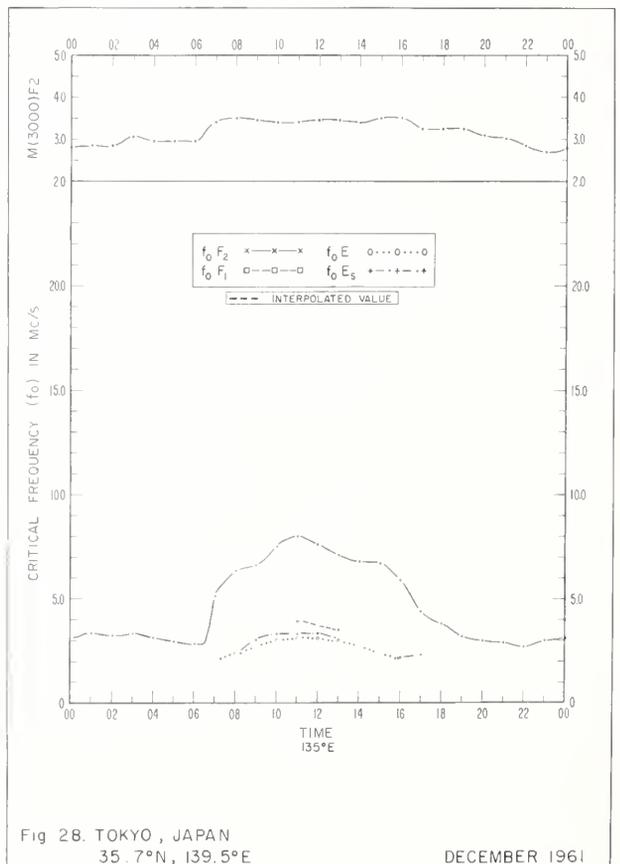
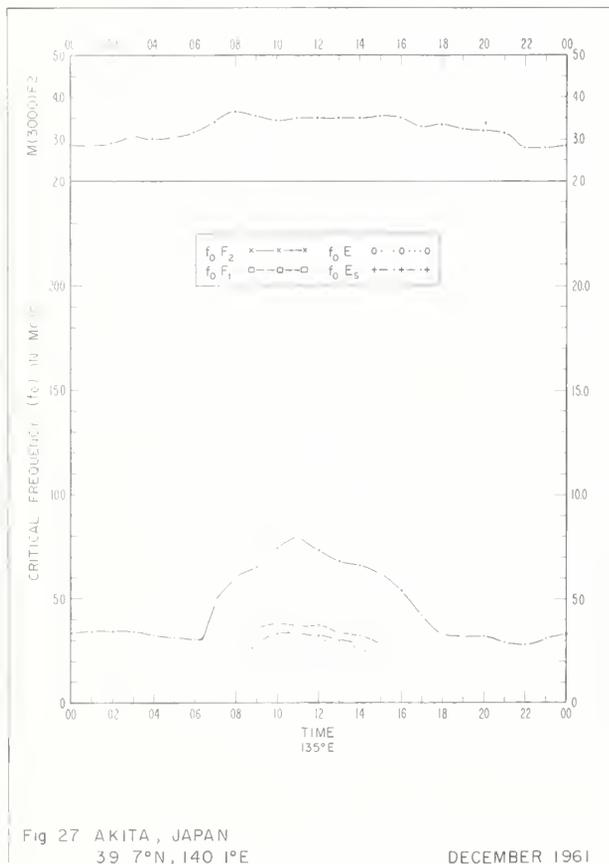
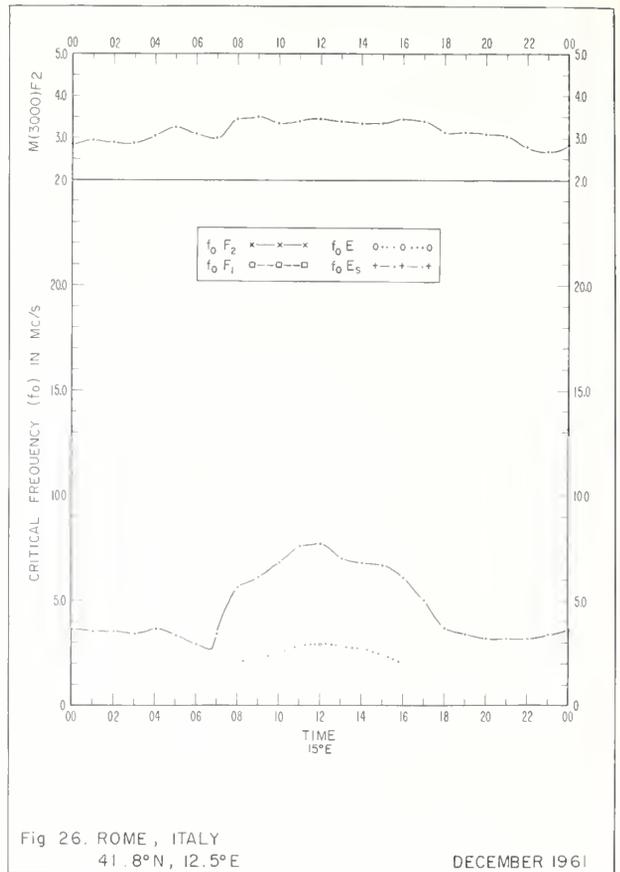
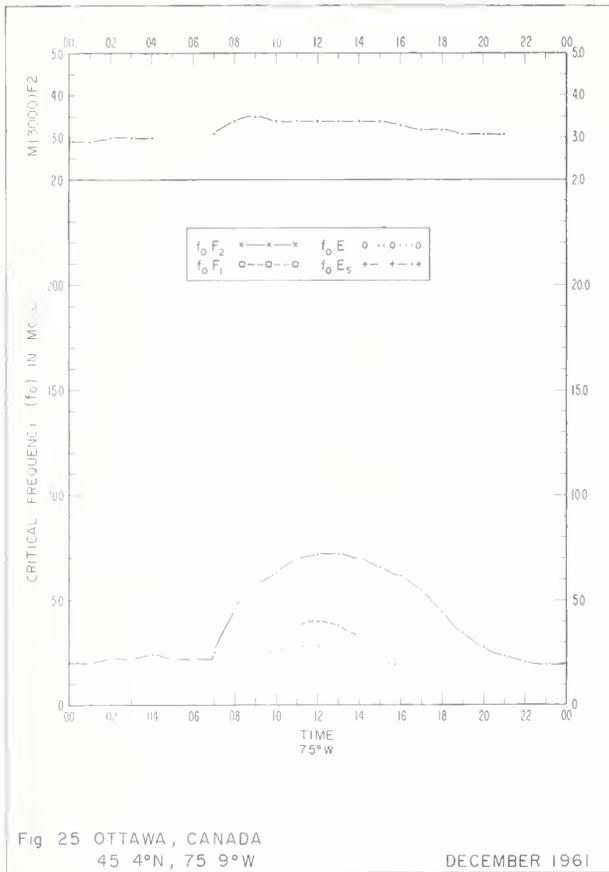


Fig 24. WAKKANAI, JAPAN
45.4°N, 141.7°E
DECEMBER 1961



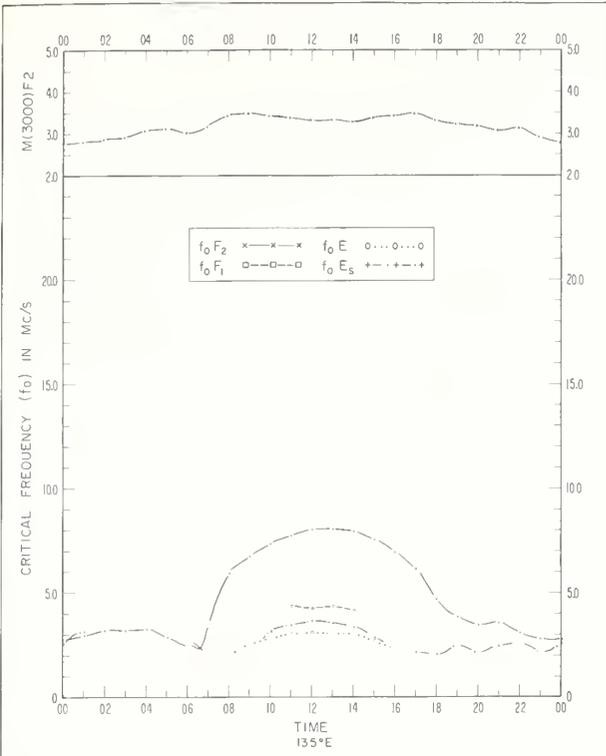


Fig 29. YAMAGAWA, JAPAN
31.2°N, 130.6°E

DECEMBER 1961

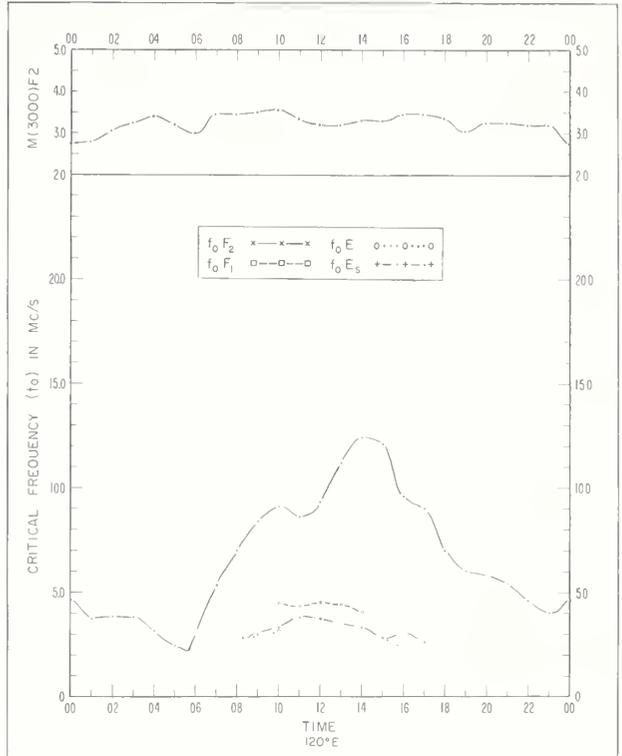


Fig 30. FORMOSA, CHINA
25.0°N, 121.5°E

DECEMBER 1961

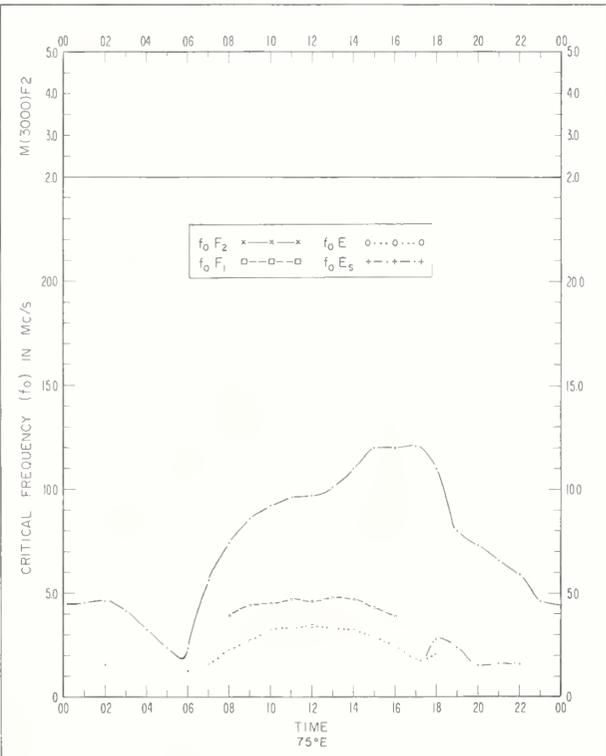


Fig 31. AHMEDABAD, INDIA
23.0°N, 72.6°E

DECEMBER 1961

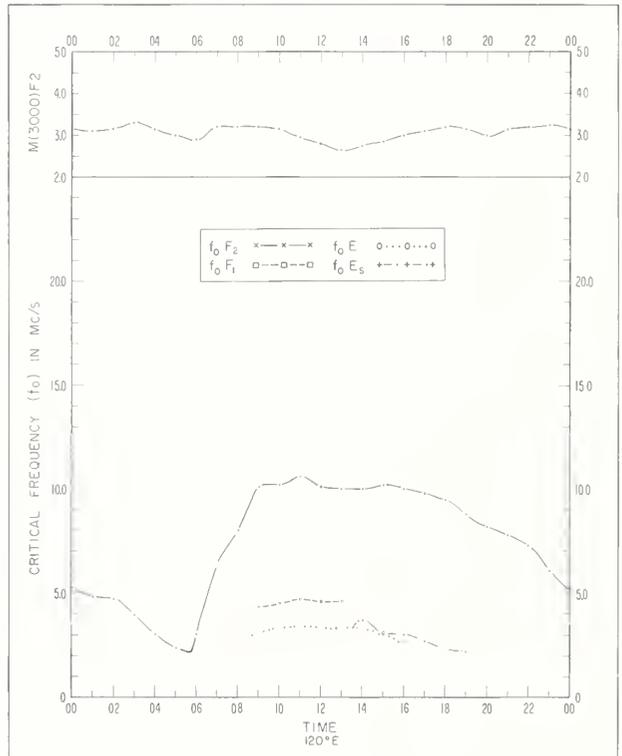


Fig 32. BAGUIO, LUZON
16.4°N, 120.6°E

DECEMBER 1961

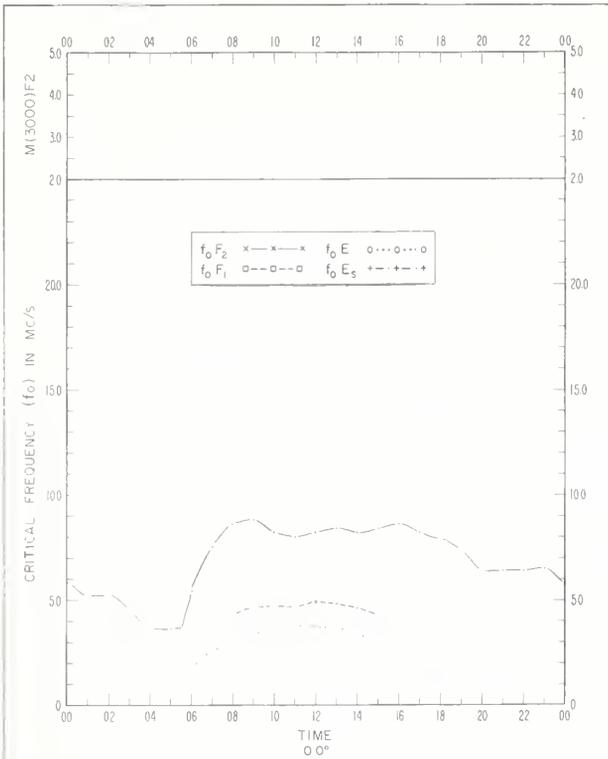


Fig 33 IBADAN, NIGERIA
7.4°N, 3.9°E

DECEMBER 1961

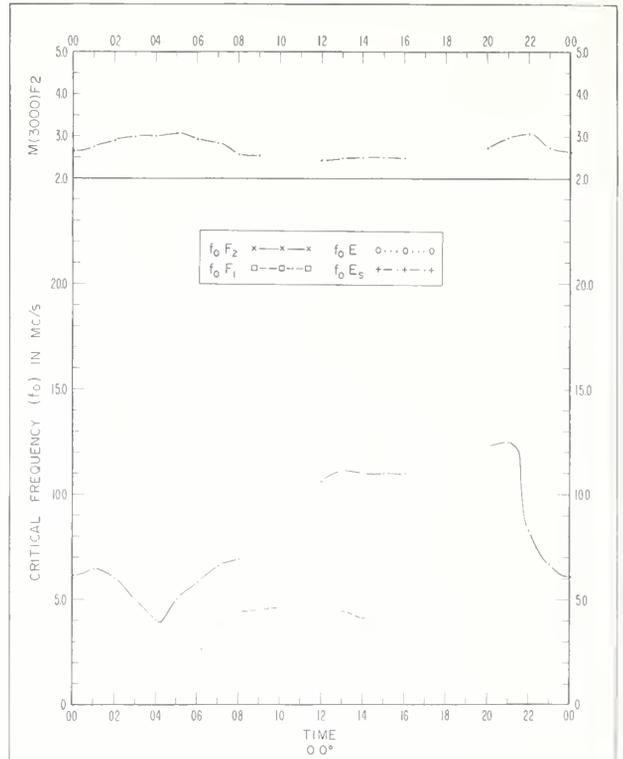


Fig 34 LEOPOLDVILLE, CONGO
4.4°S, 15.2°E

DECEMBER 1961

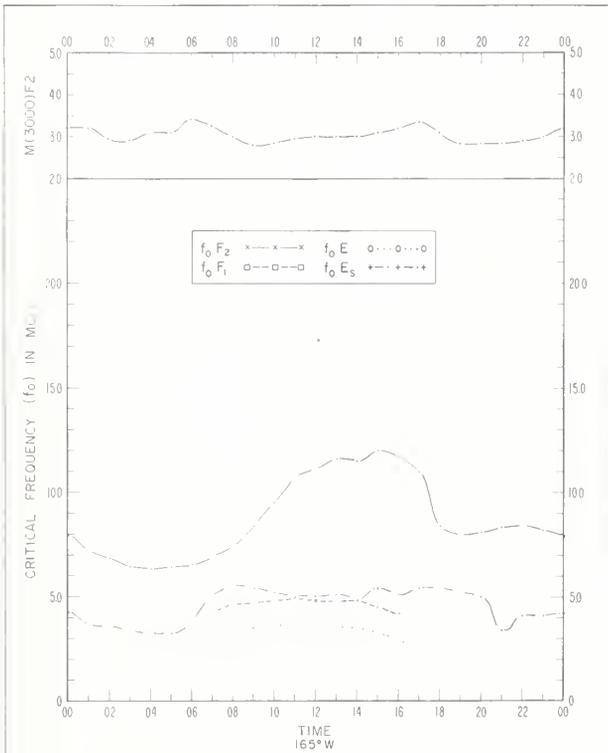


Fig 35 RAROTONGA, COOK IS
21.2°S, 159.8°W

DECEMBER 1961

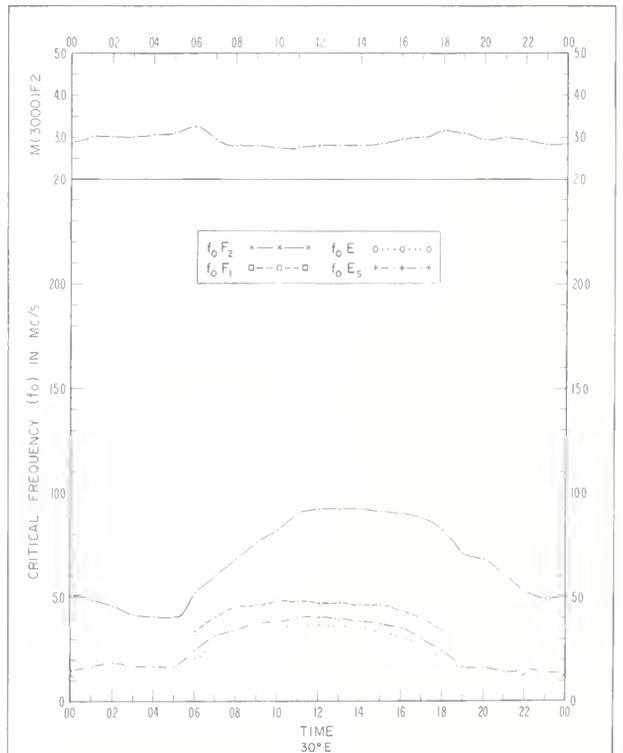


Fig 36 JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E

DECEMBER 1961

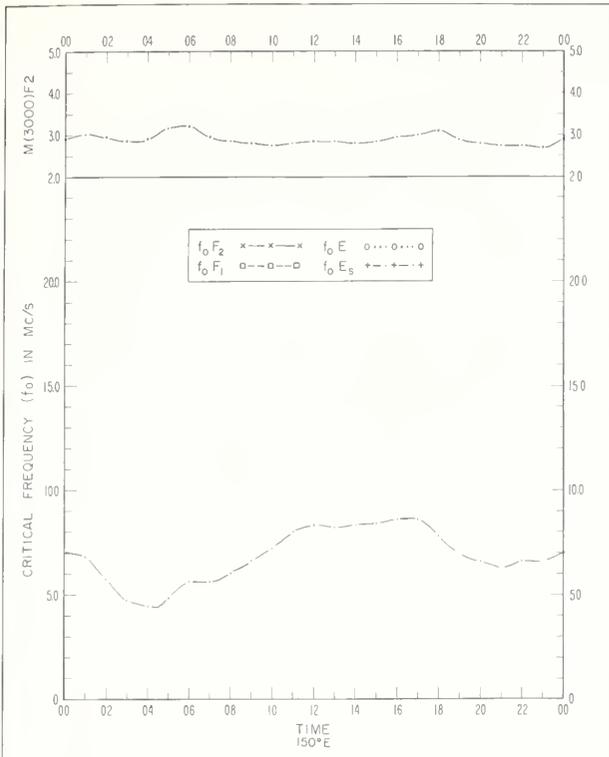


Fig 37. BRISBANE, AUSTRALIA
27 5°S, 152.9°E

DECEMBER 1961

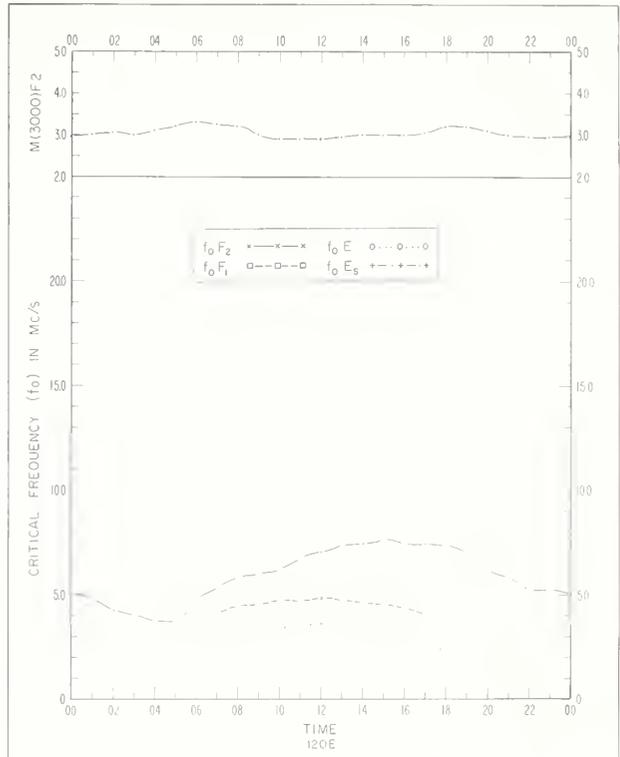


Fig 3B MUNDARING, WESTERN AUSTRALIA
32 0°S, 116.2°E

DECEMBER 1961

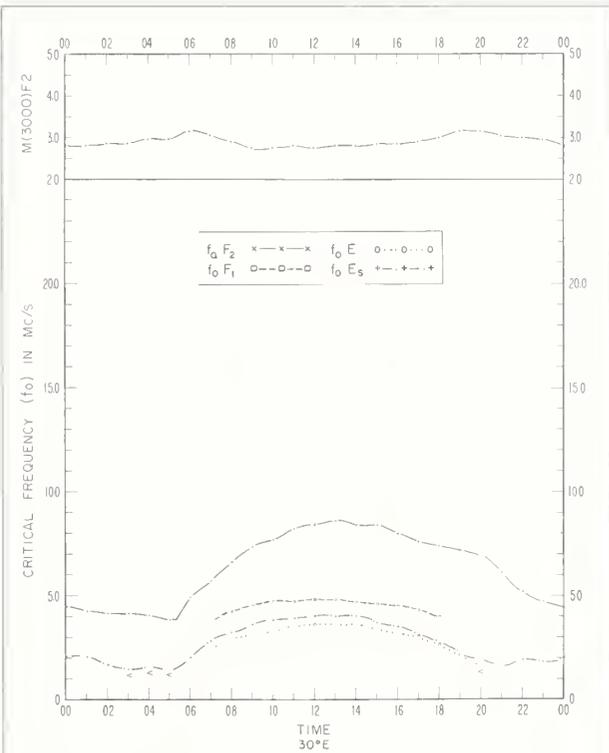


Fig 39. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E

DECEMBER 1961

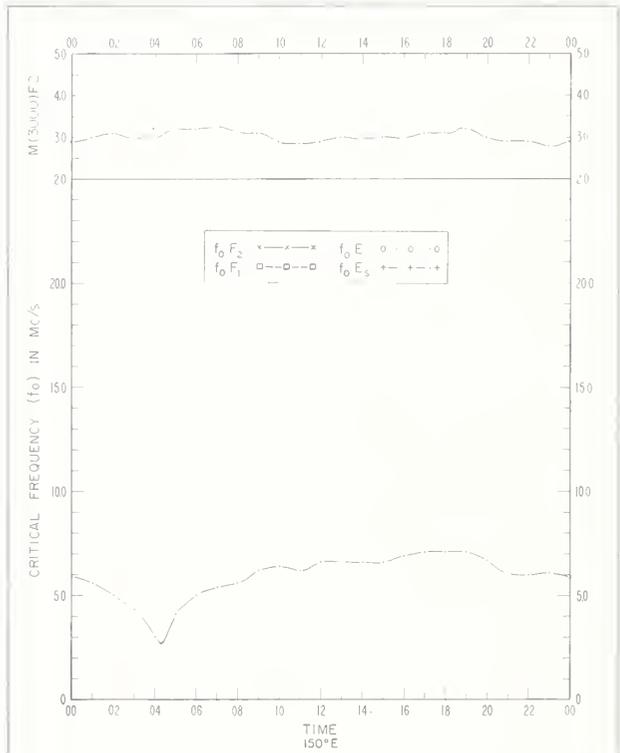
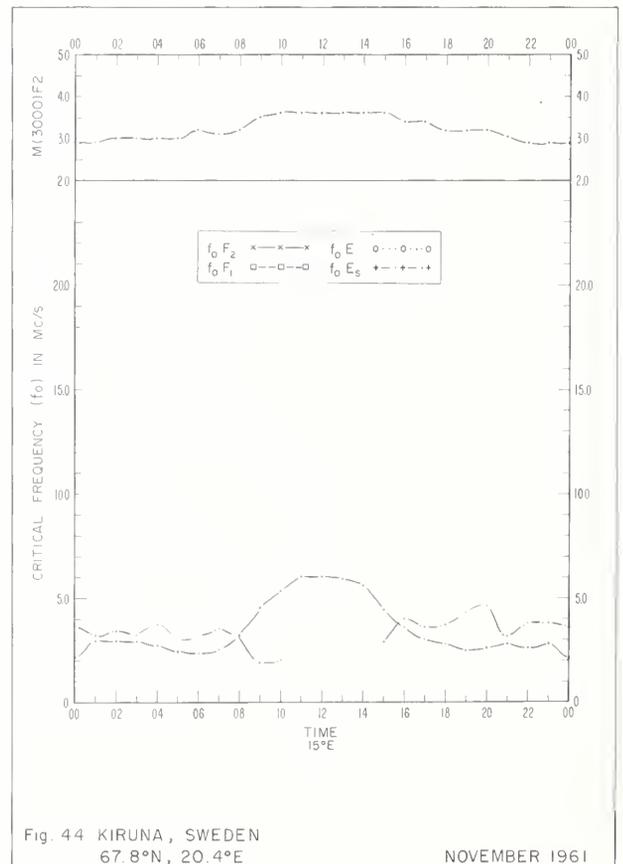
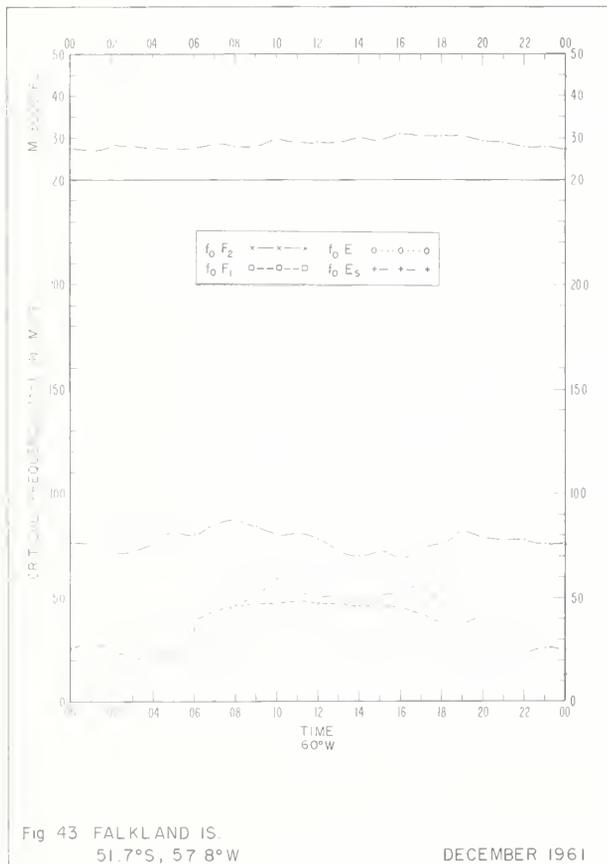
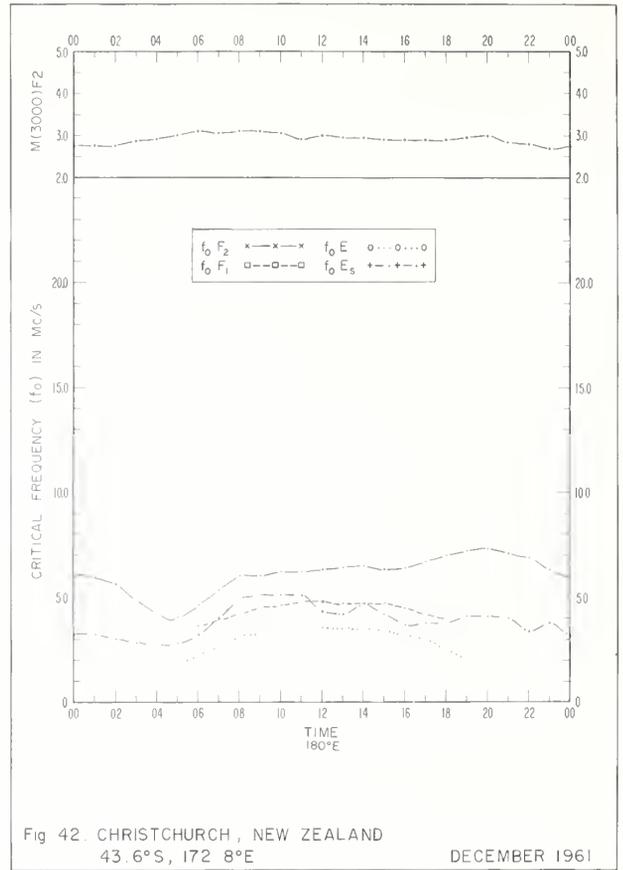
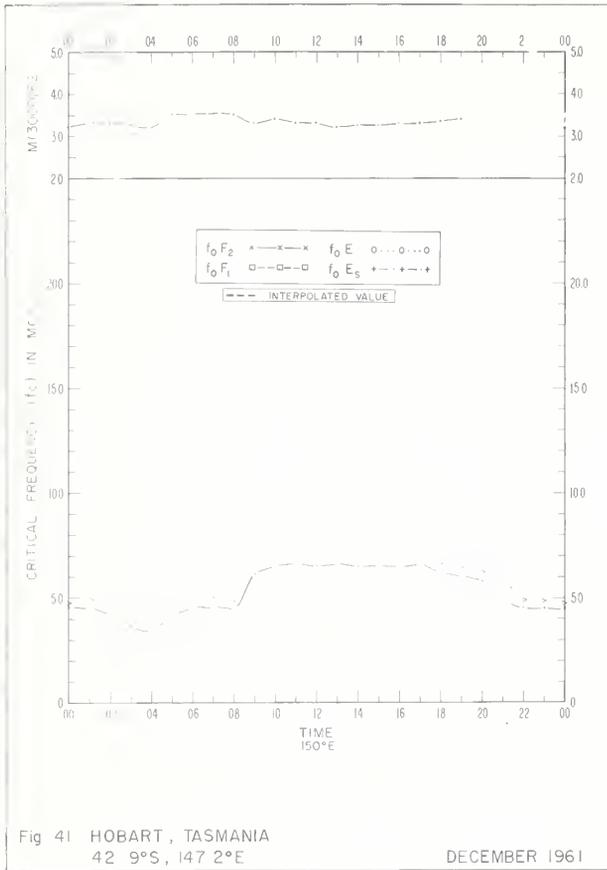
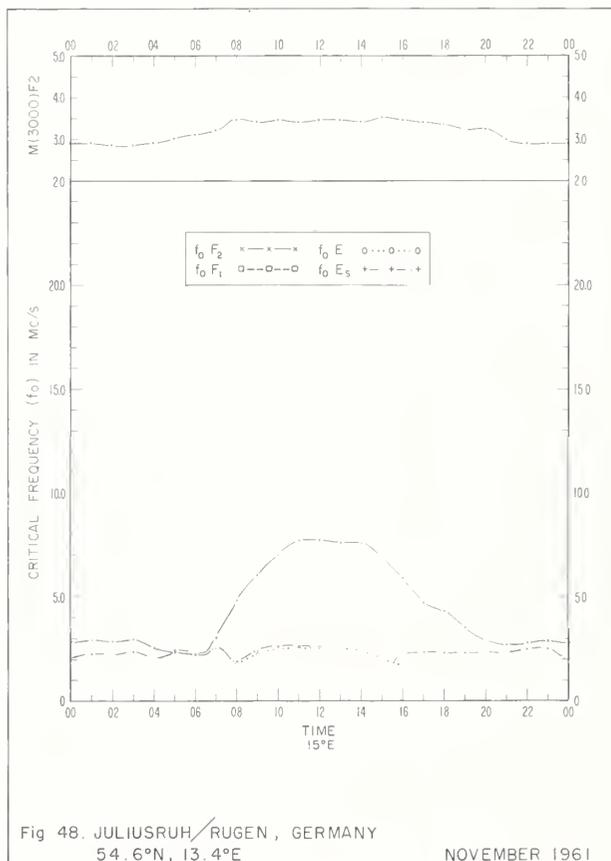
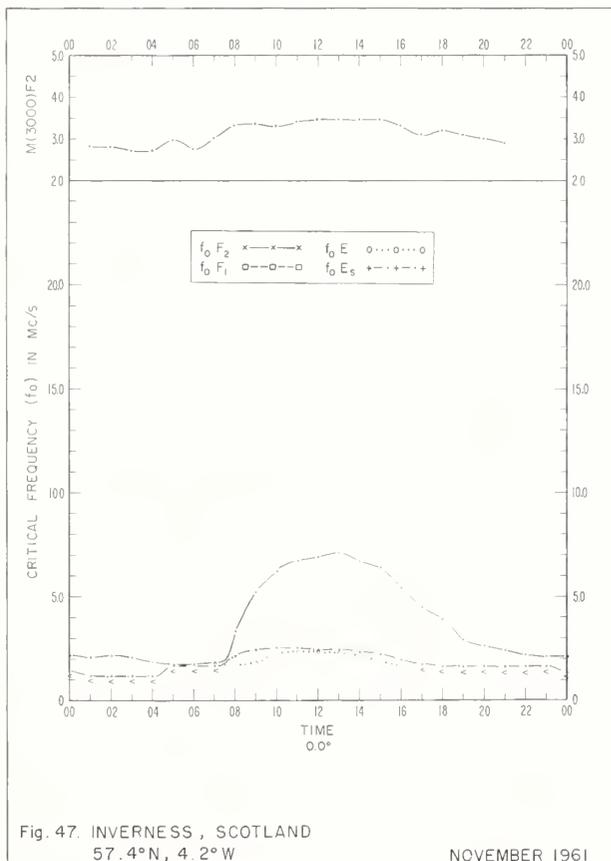
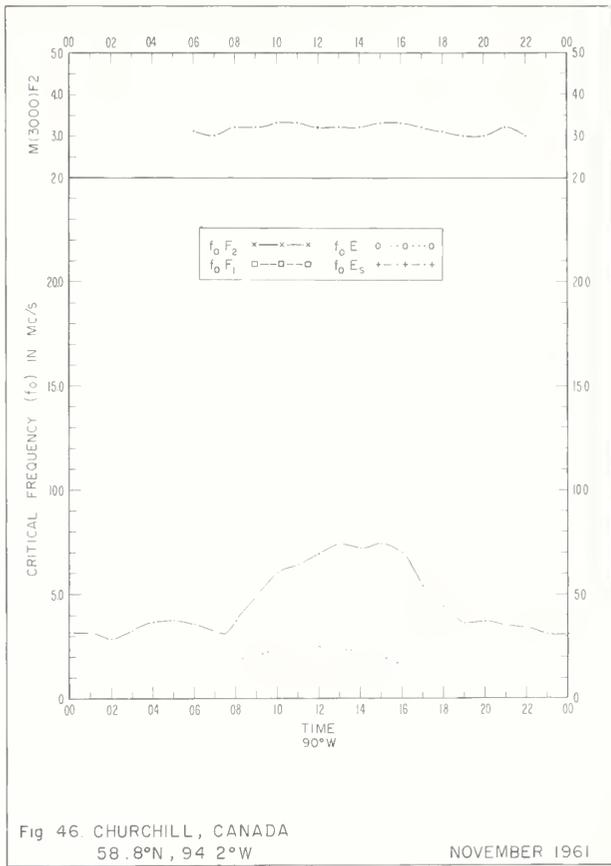
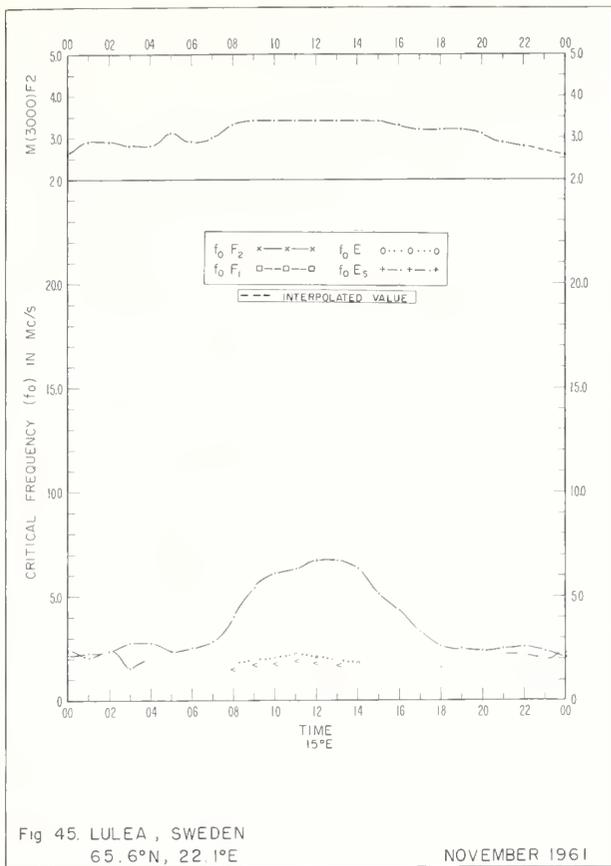


Fig. 40. CANBERRA, AUSTRALIA
35.3°S, 149.0°E

DECEMBER 1961





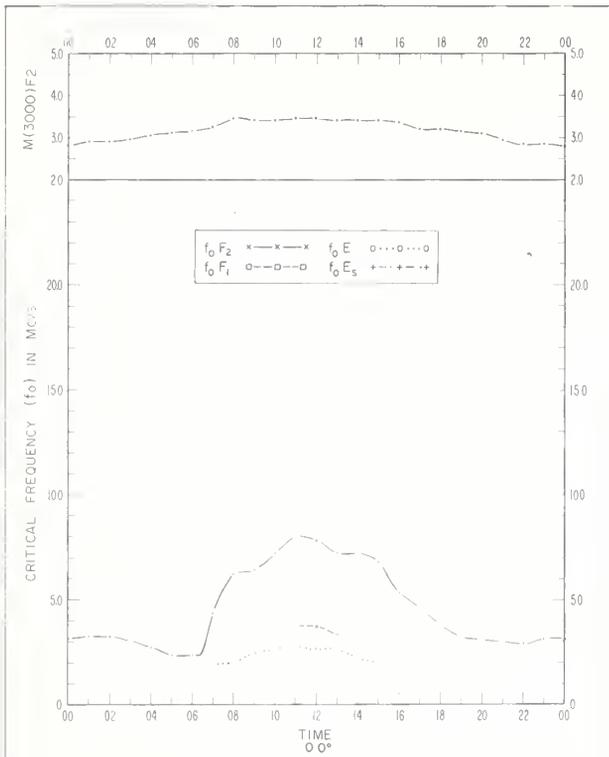


Fig. 49 De BILT, NETHERLANDS
52.1°N, 5 2°E
NOVEMBER 1961

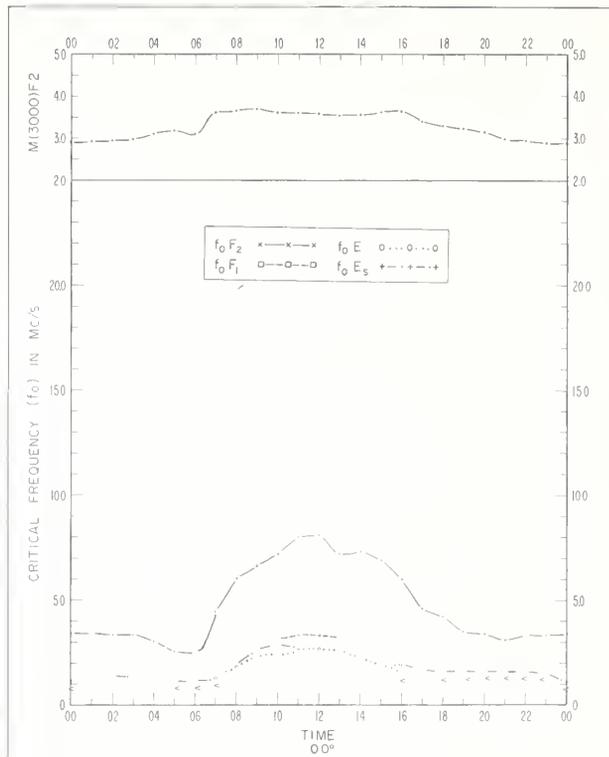


Fig 50 DOURBES, BELGIUM
50.1°N, 4 6°E
NOVEMBER 1961

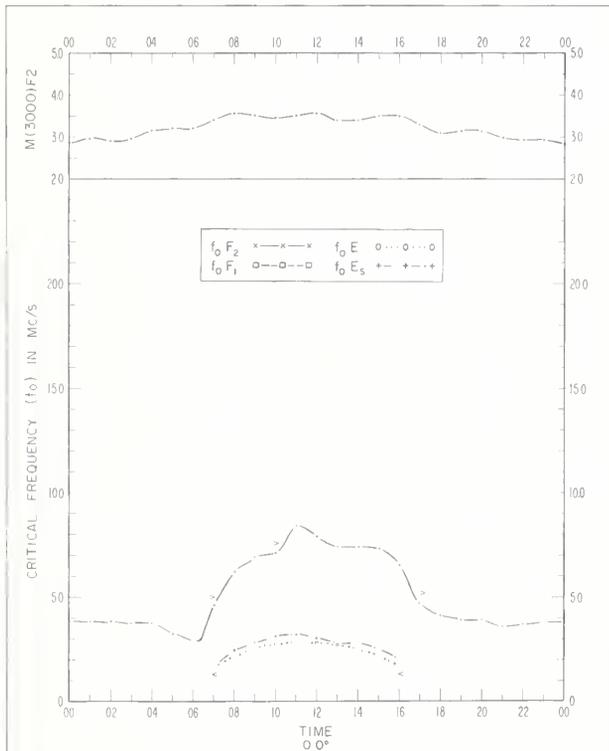


Fig 51 GARCHY, FRANCE
47.3°N, 3 1°E
NOVEMBER 1961

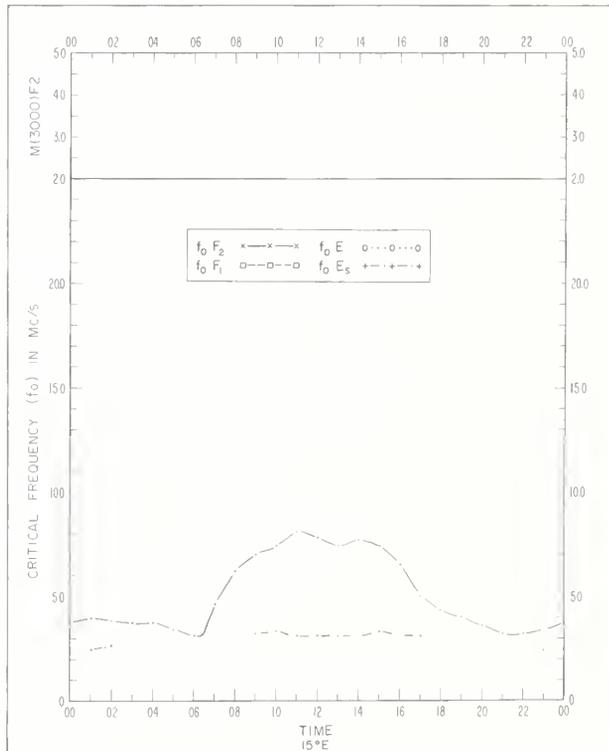


Fig 52 GRAZ, AUSTRIA
47.1°N, 15.5°E
NOVEMBER 1961

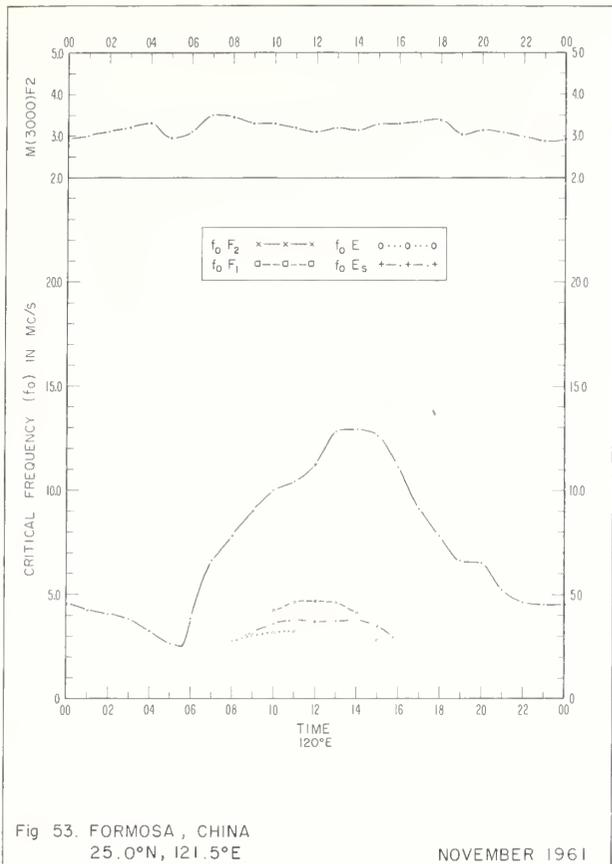


Fig 53. FORMOSA, CHINA
25.0°N, 121.5°E

NOVEMBER 1961

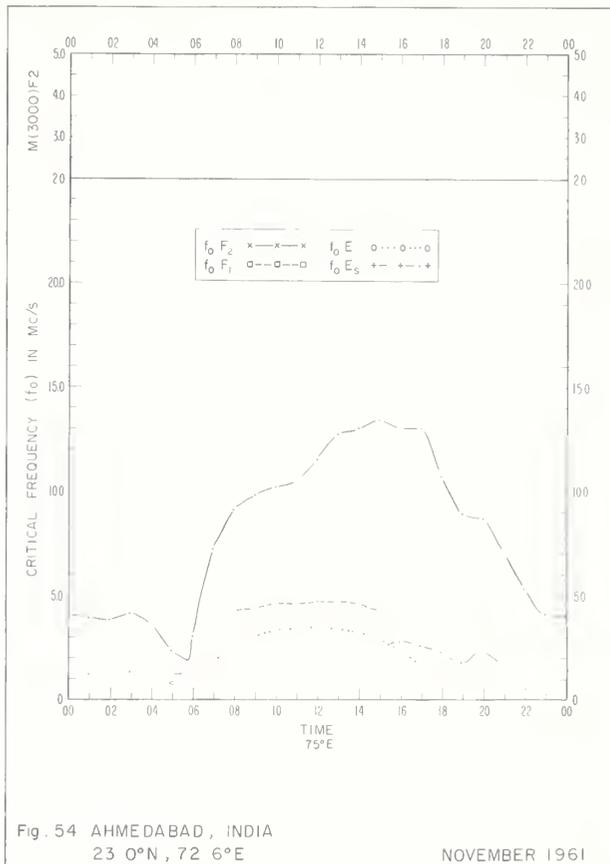


Fig. 54 AHMEDABAD, INDIA
23.0°N, 72.6°E

NOVEMBER 1961

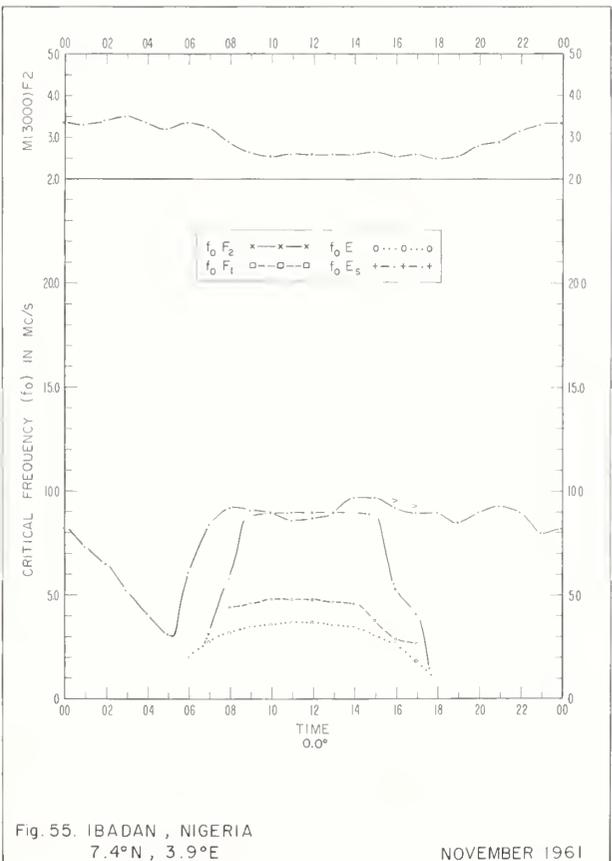


Fig. 55. IBADAN, NIGERIA
7.4°N, 3.9°E

NOVEMBER 1961

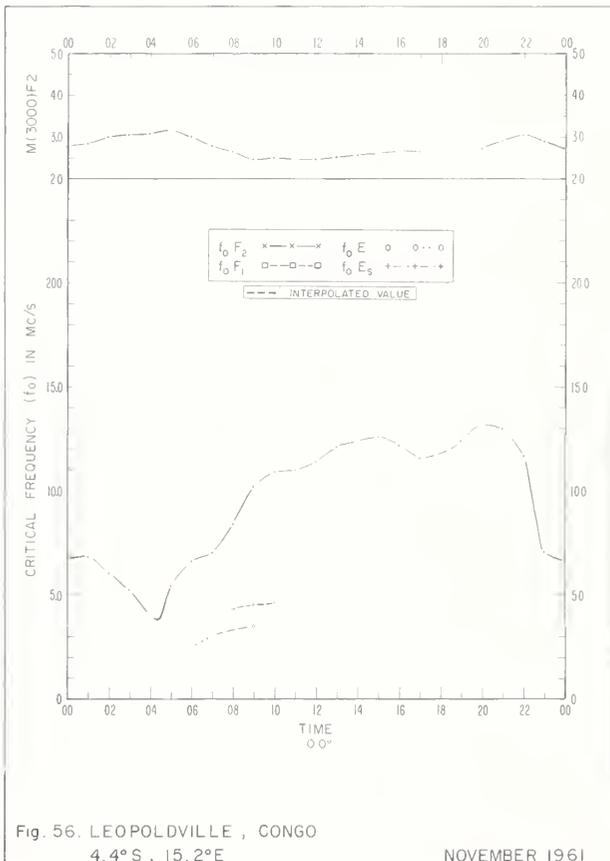
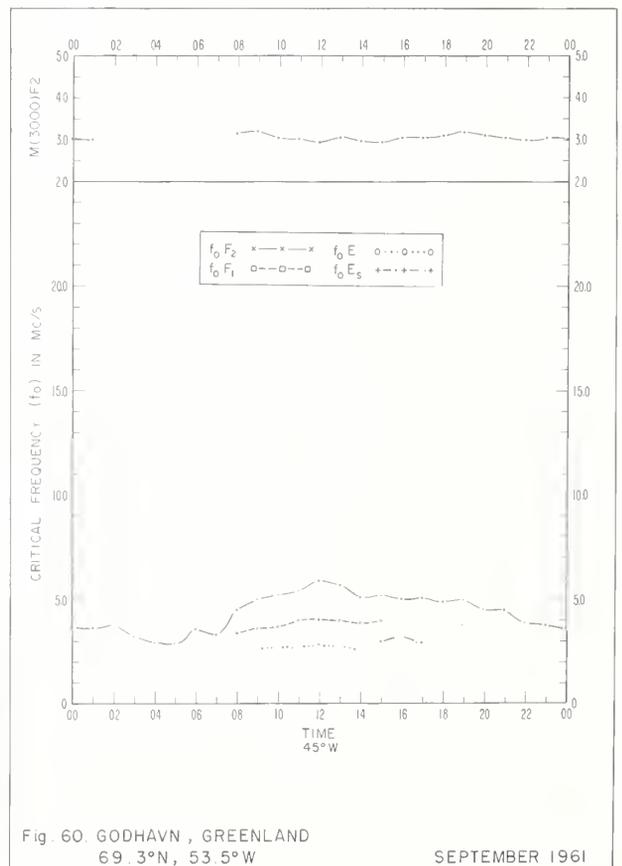
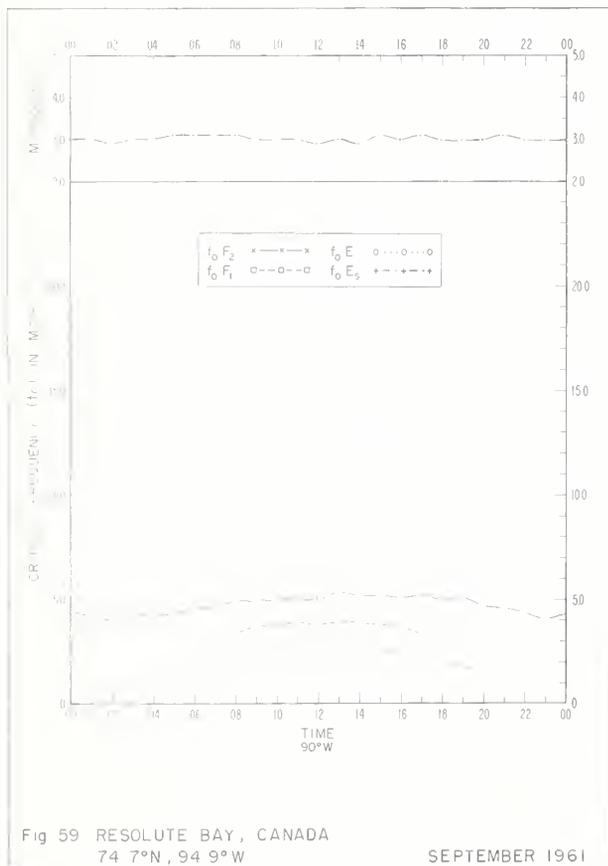
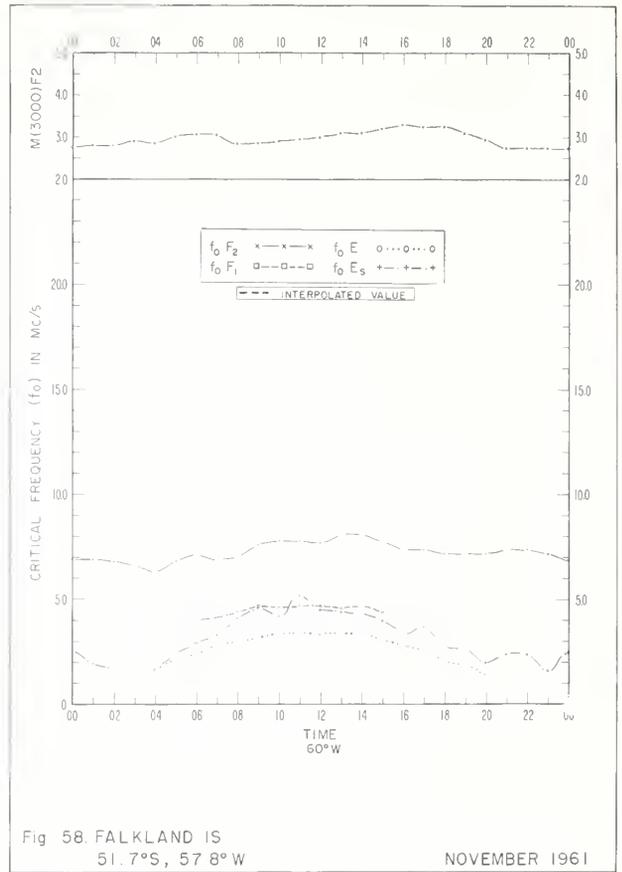
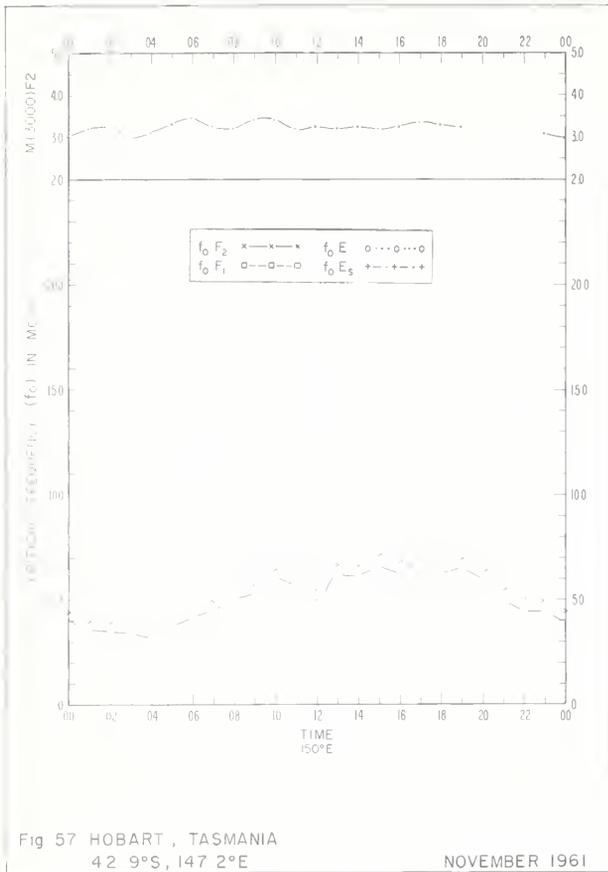


Fig. 56. LEOPOLDVILLE, CONGO
4.4°S, 15.2°E

NOVEMBER 1961



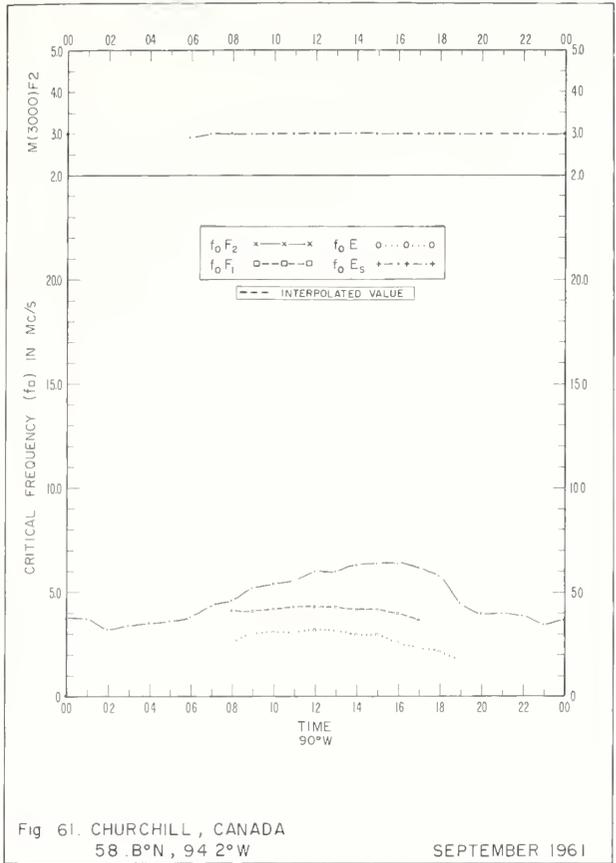


Fig 61. CHURCHILL, CANADA
58.8°N, 94.2°W
SEPTEMBER 1961

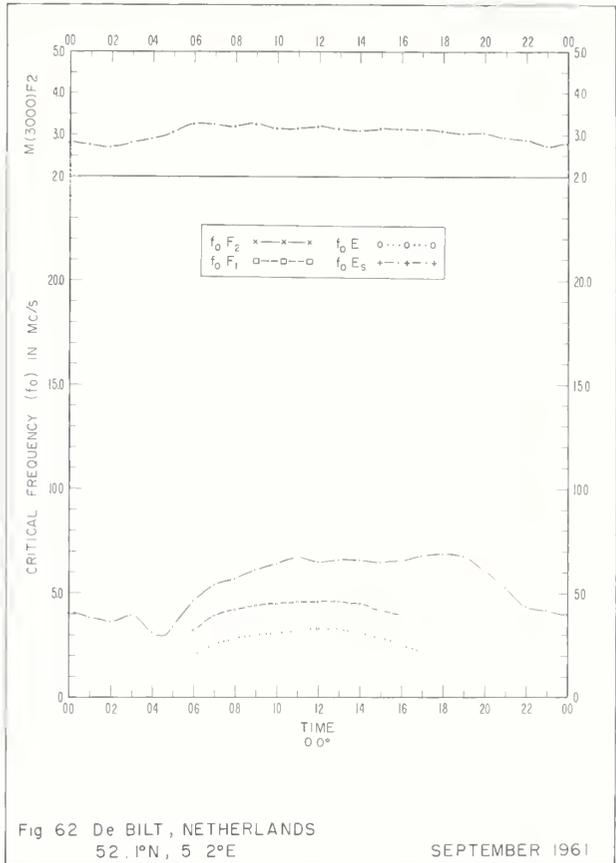


Fig 62 De BILT, NETHERLANDS
52.1°N, 5.2°E
SEPTEMBER 1961

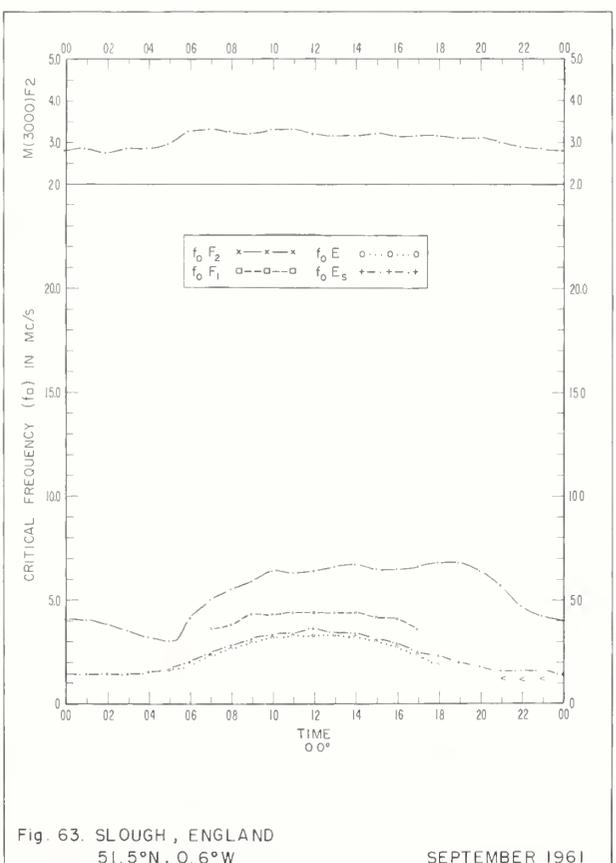


Fig 63. SLOUGH, ENGLAND
51.5°N, 0.6°W
SEPTEMBER 1961

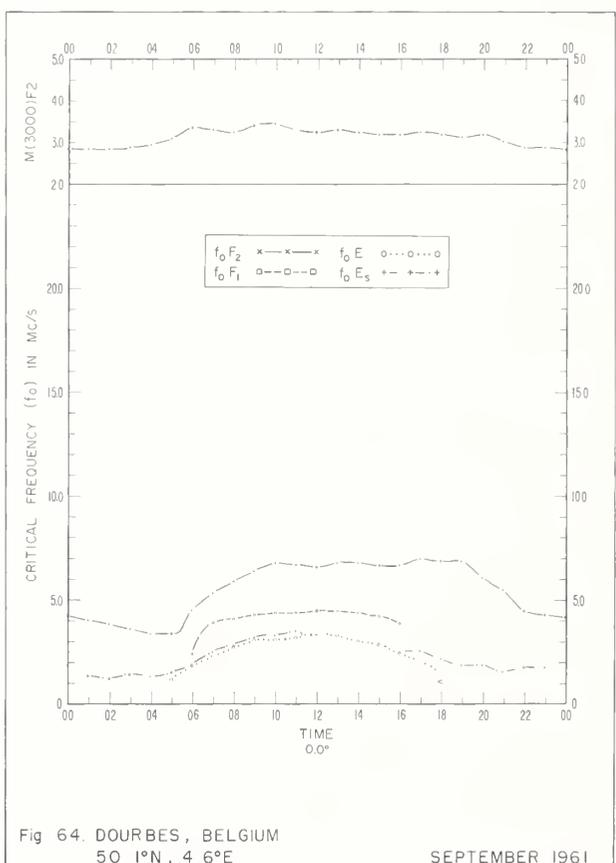
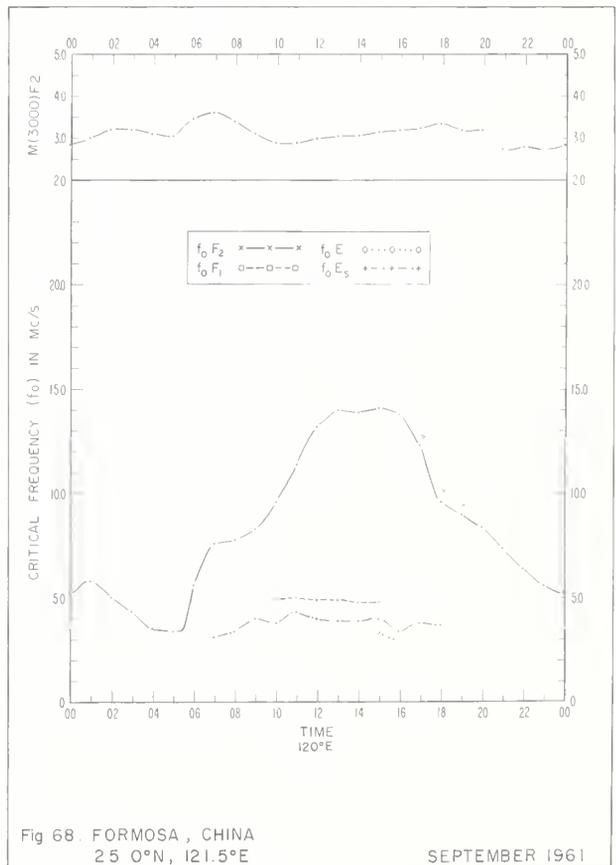
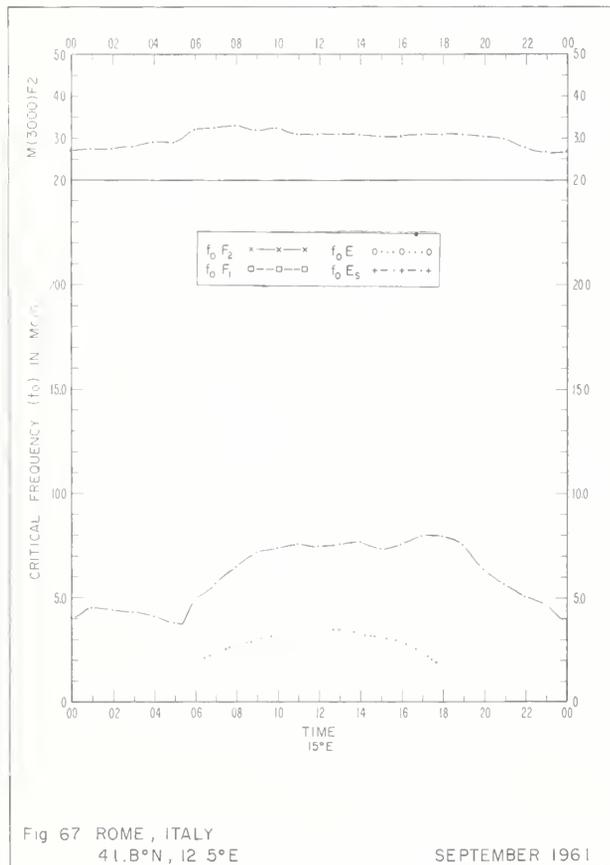
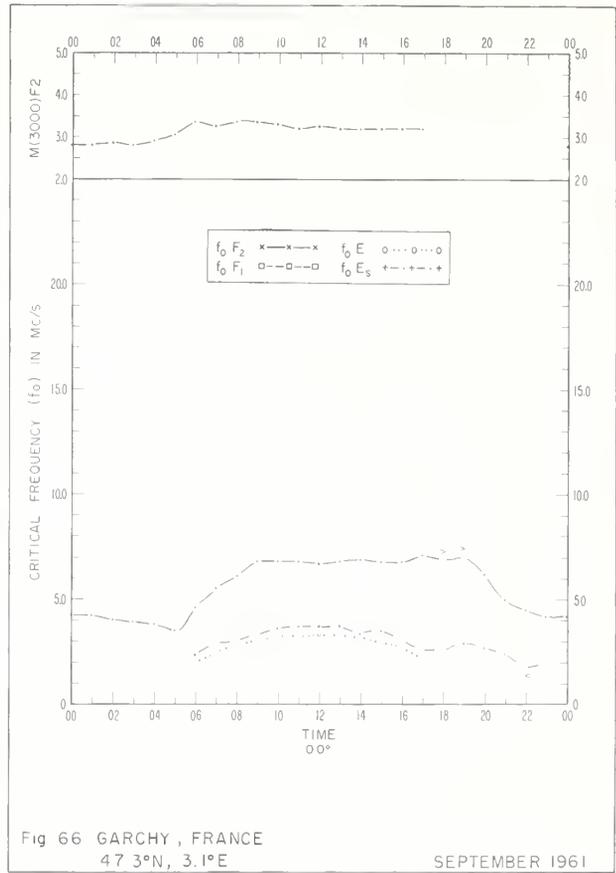
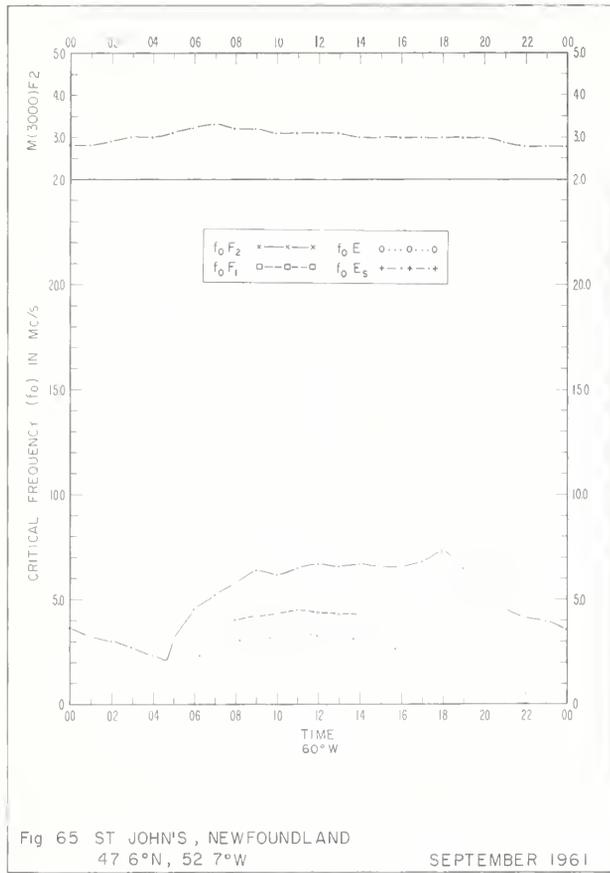
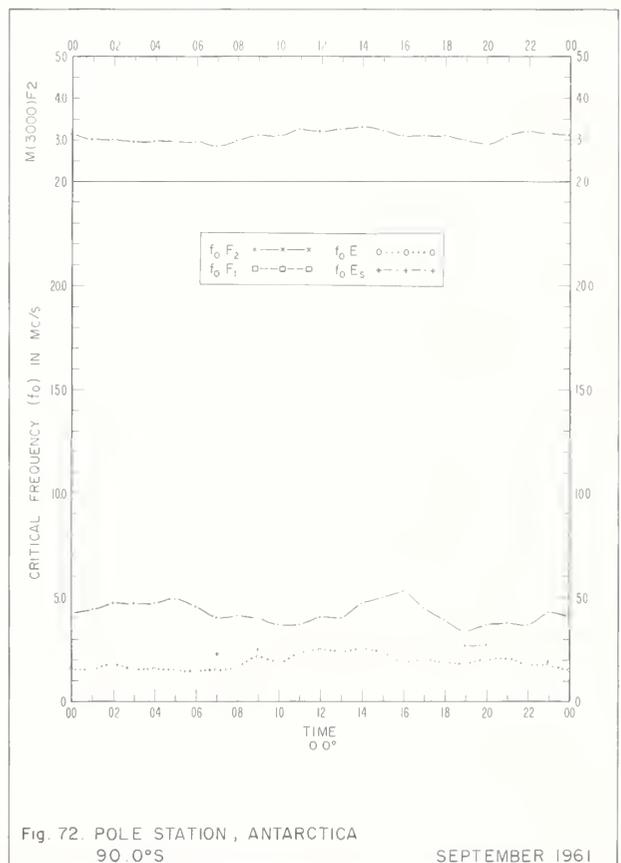
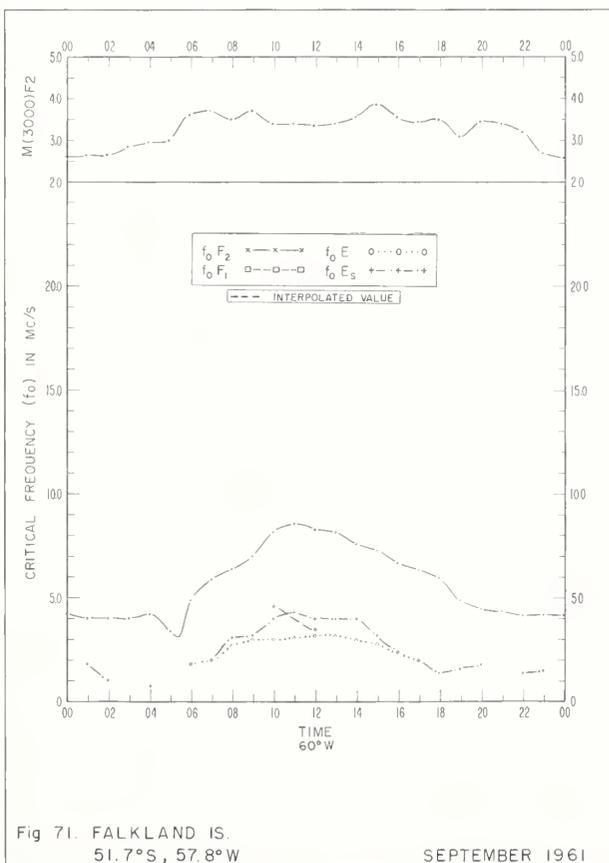
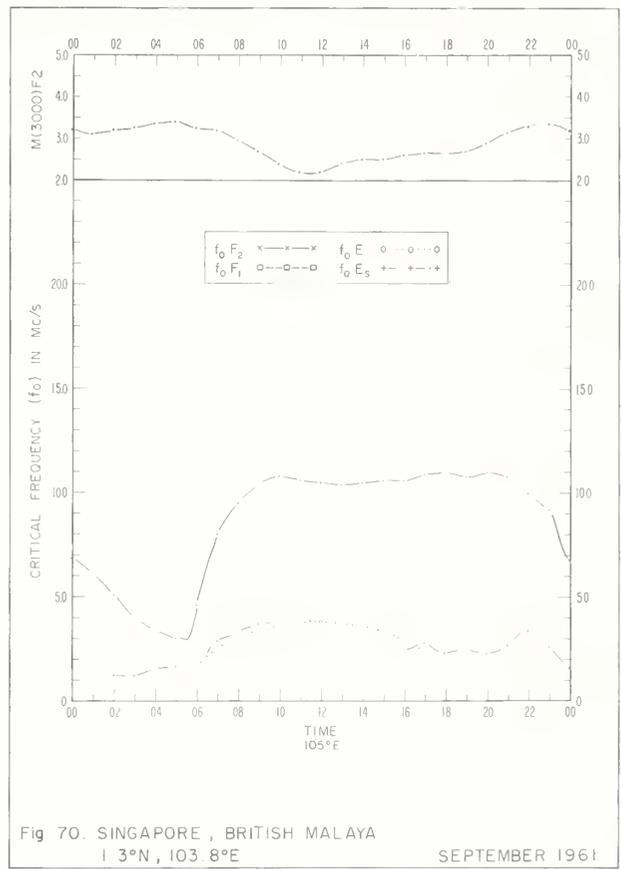
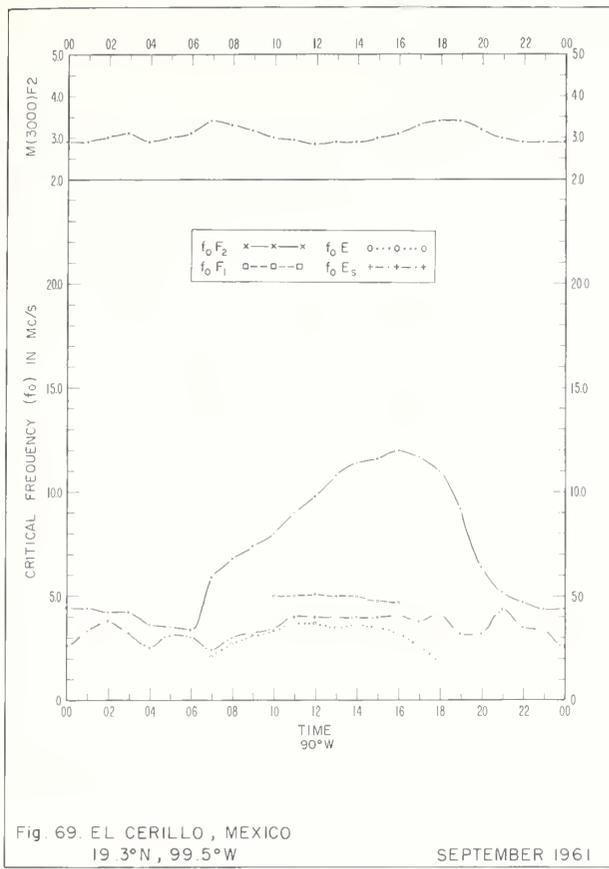


Fig 64. DOURBES, BELGIUM
50.1°N, 4.6°E
SEPTEMBER 1961





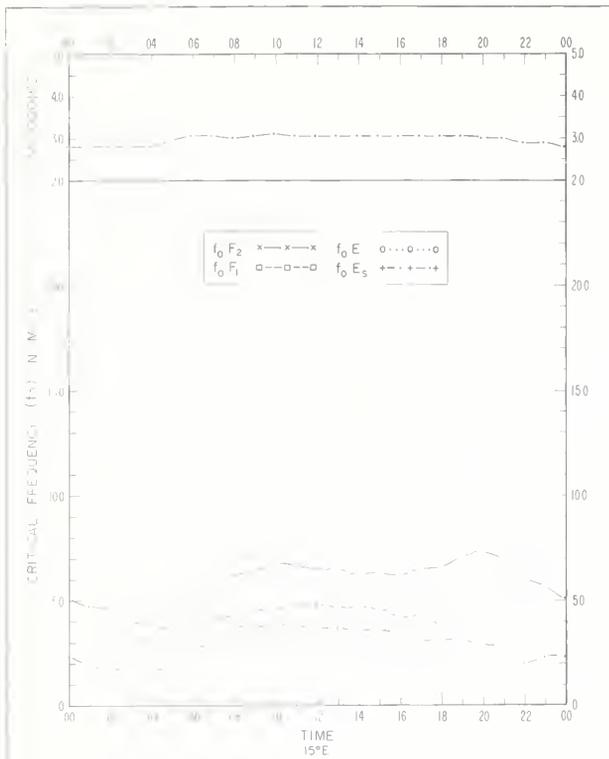


Fig 73 JULIUSRUH/RÜGEN, GERMANY
54 6°N, 13.4°E
AUGUST 1961

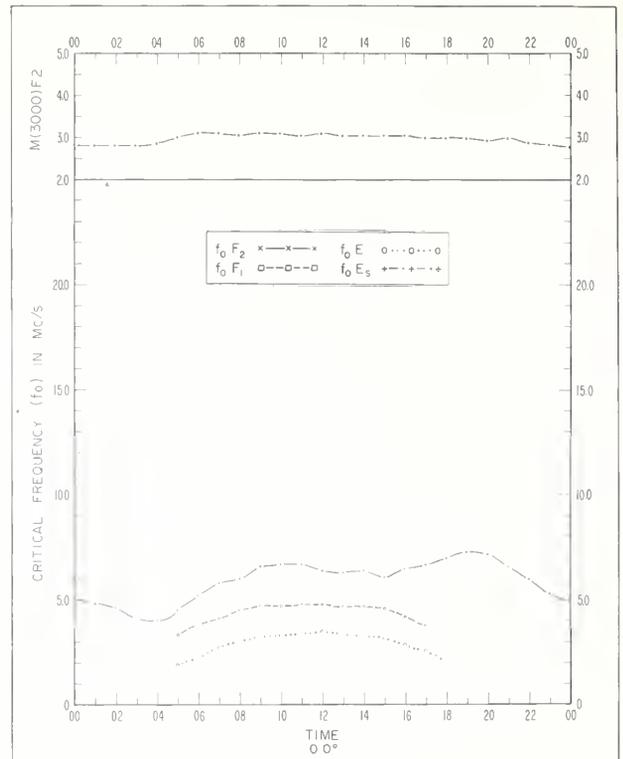


Fig 74 De BILT, NETHERLANDS
52 1°N, 5.2°E
AUGUST 1961

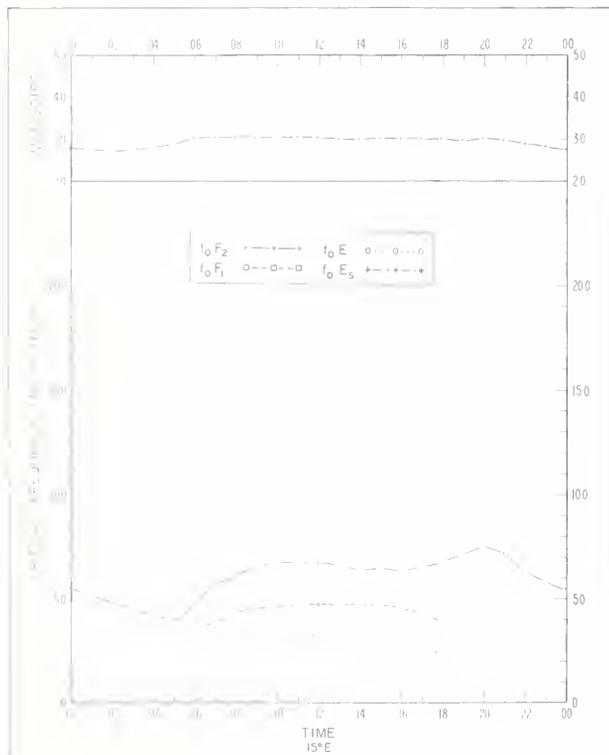


Fig 75 LINDAU/HARZ, GERMANY
51 6°N, 10.1°E
AUGUST 1961

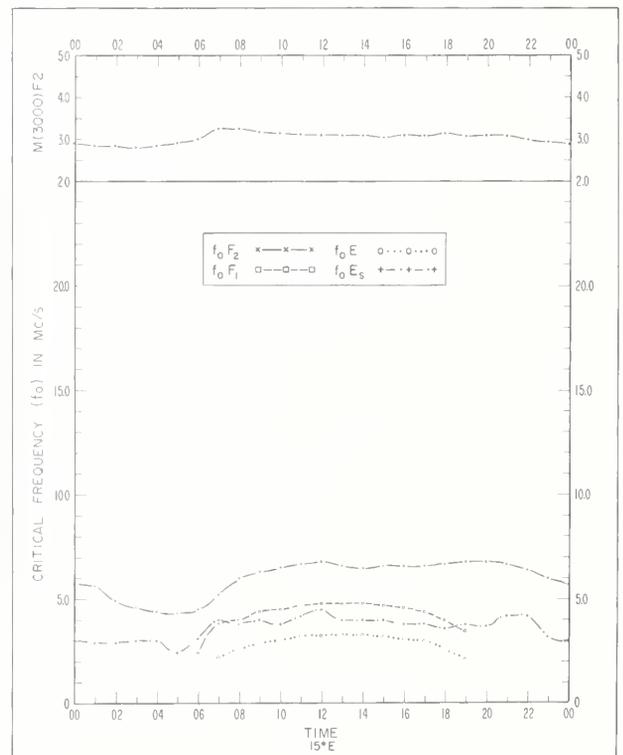


Fig 76 PARIS, FRANCE
48.1°N, 2.3°E
AUGUST 1961

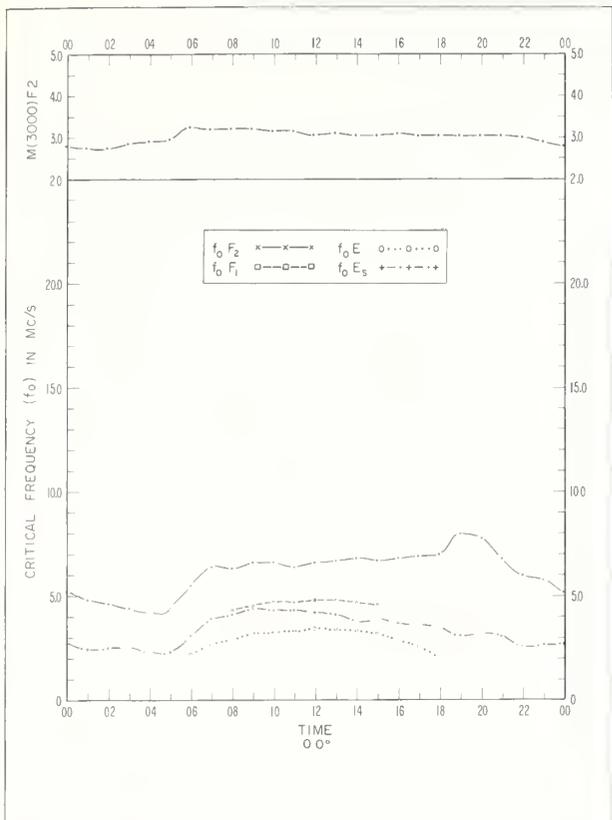


Fig 77. GARCHY , FRANCE
47.3°N, 3.1°E

AUGUST 1961

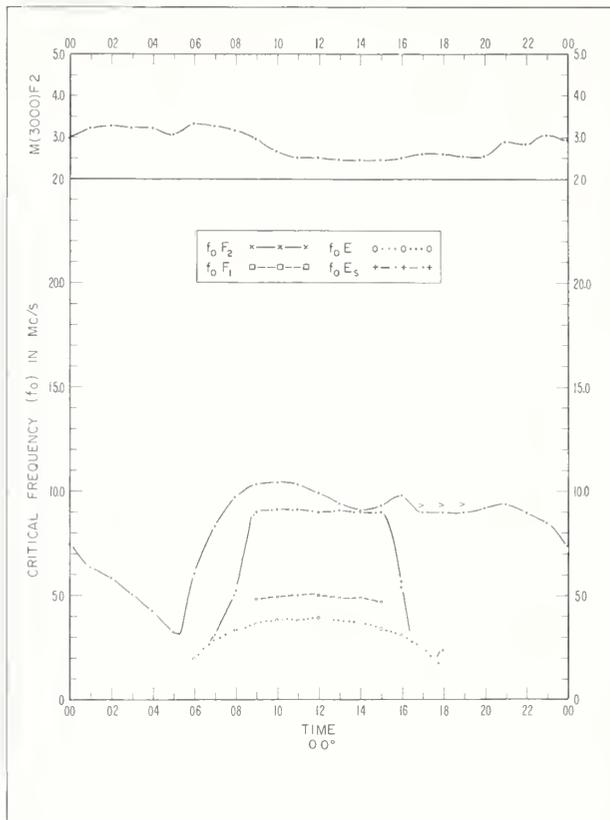


Fig 78 IBADAN , NIGERIA
7.4°N, 3.9°E

AUGUST 1961

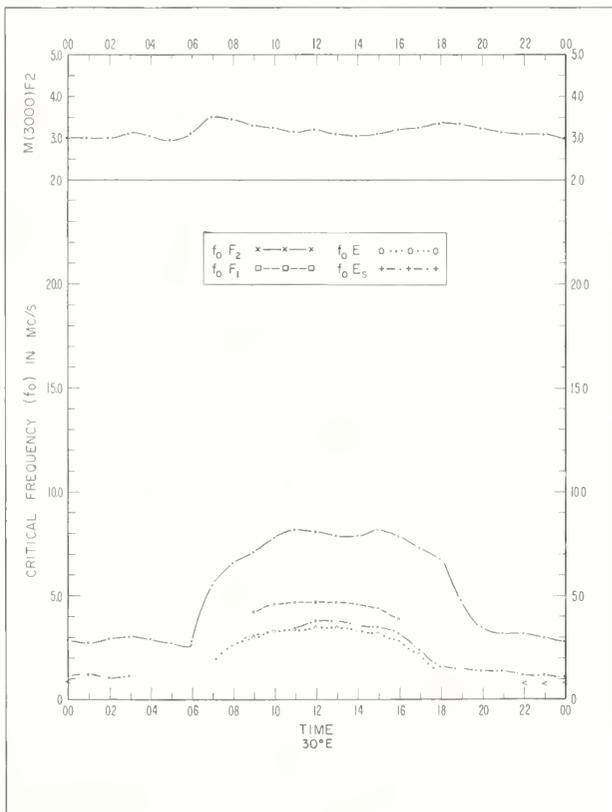


Fig. 79. JOHANNESBURG , UNION OF S. AFRICA
26.1°S, 28.1°E

AUGUST 1961

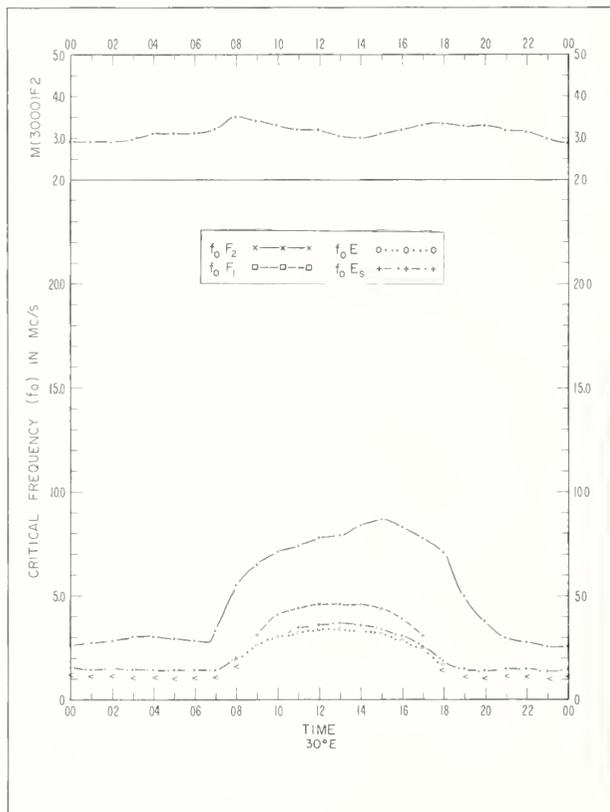
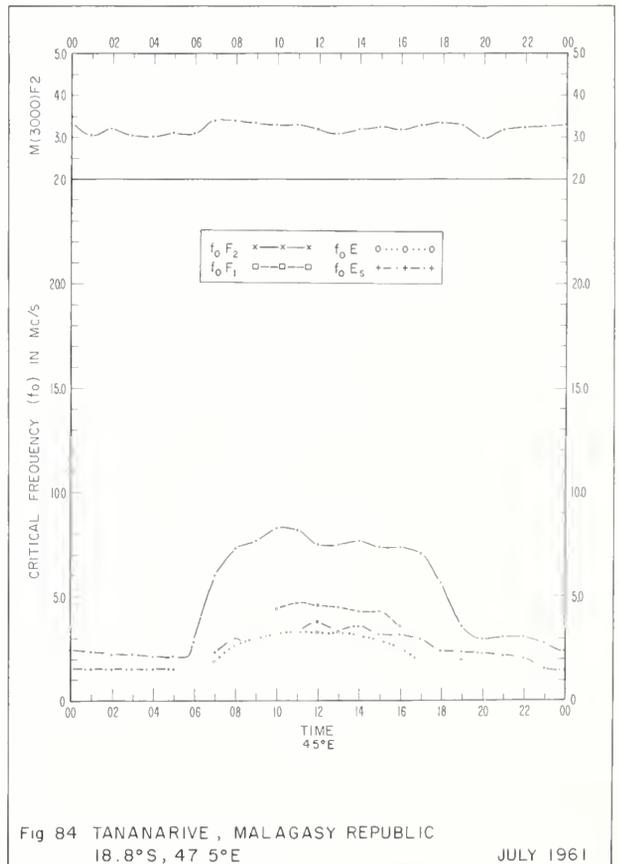
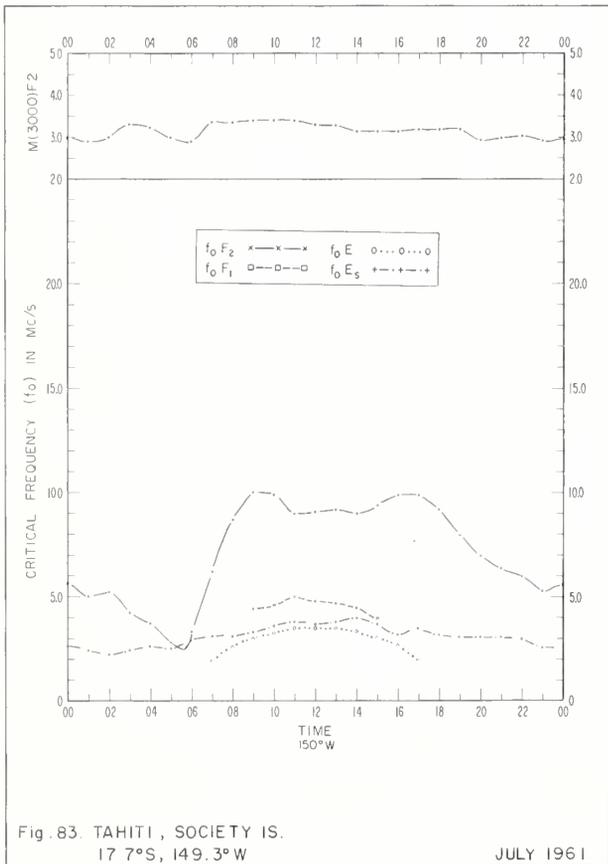
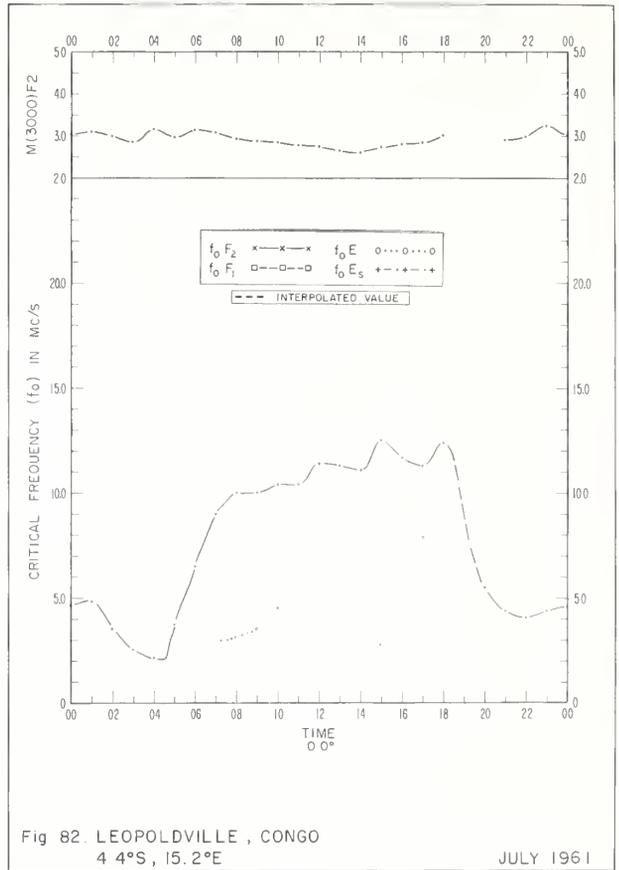
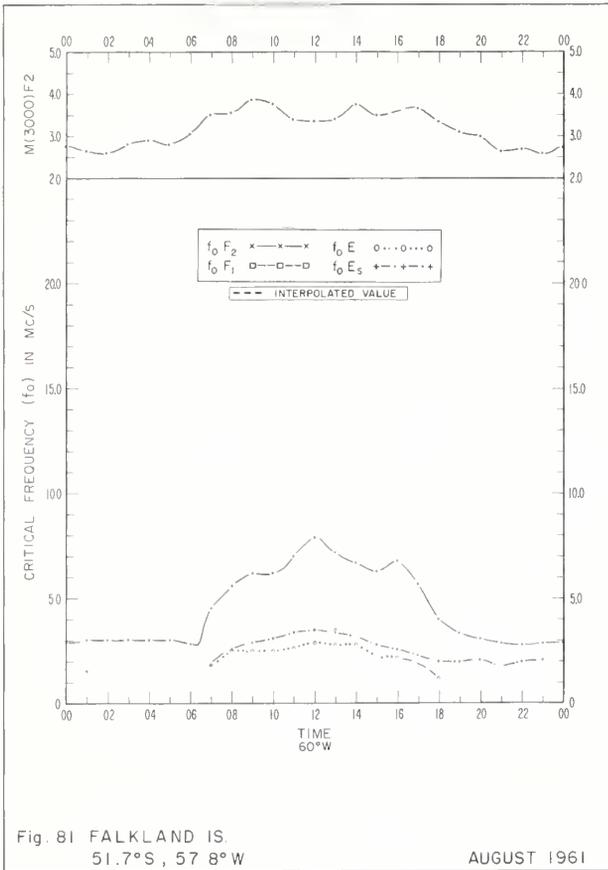
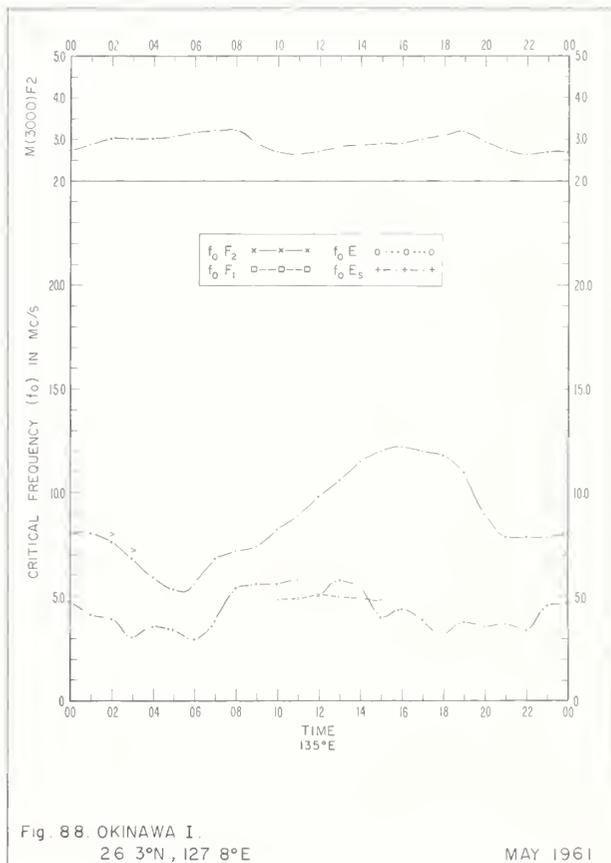
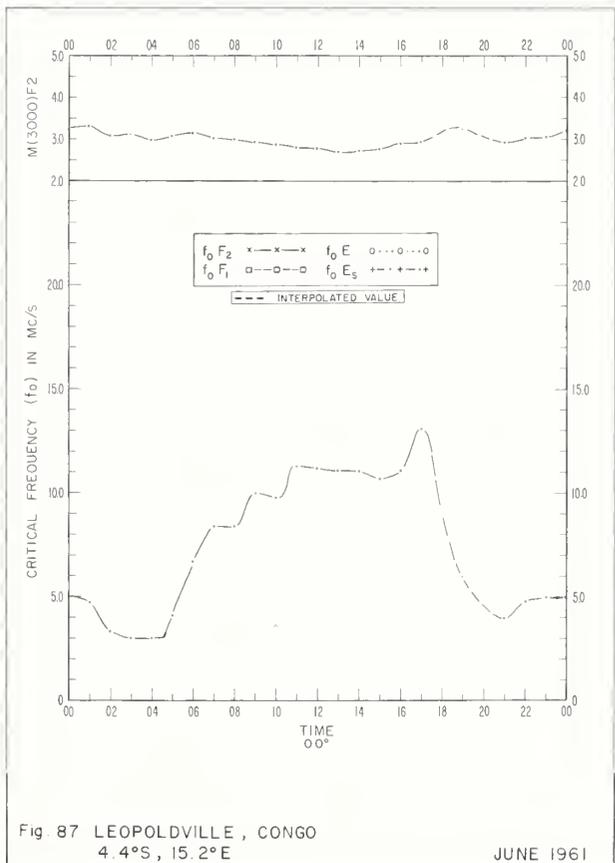
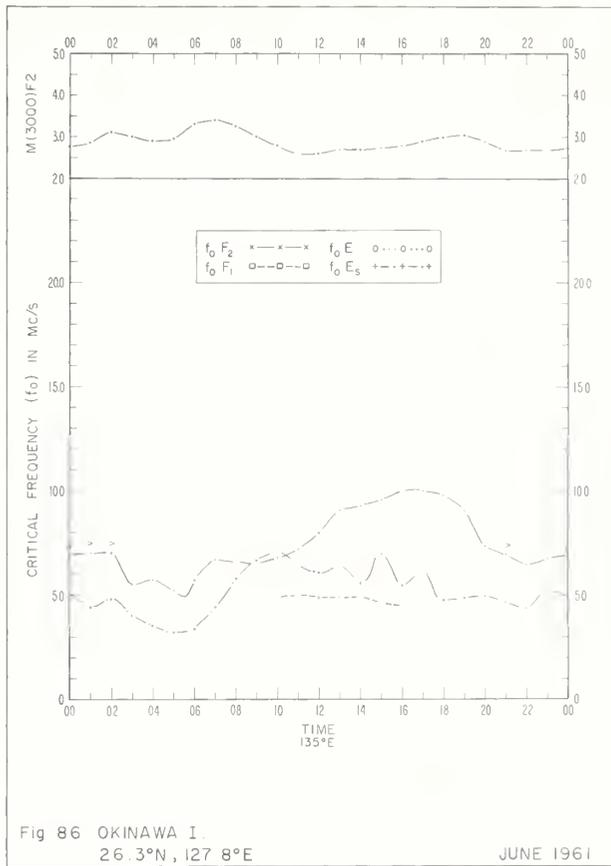
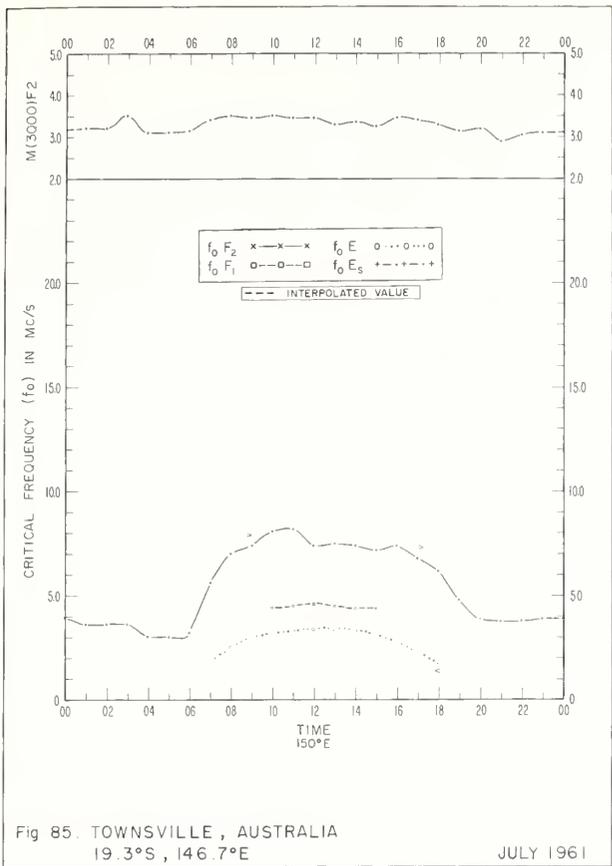
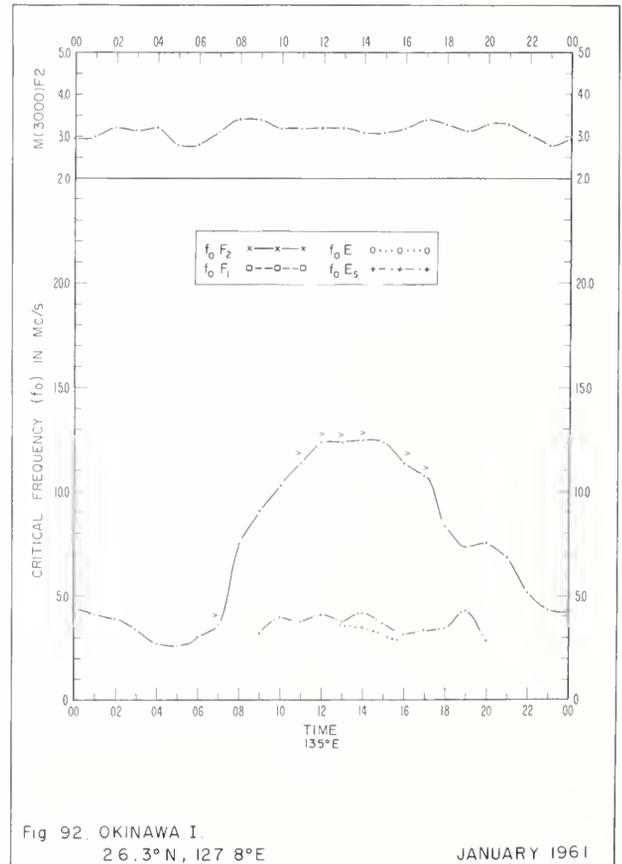
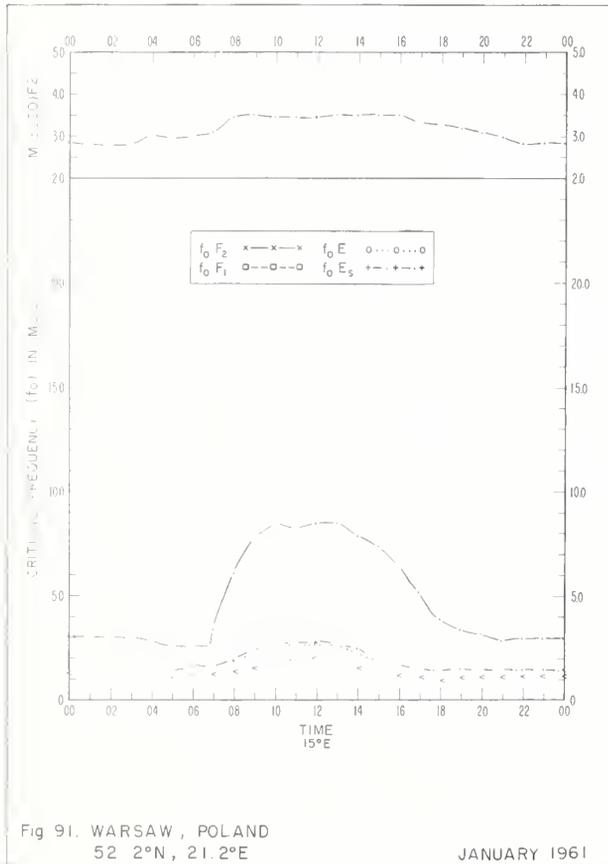
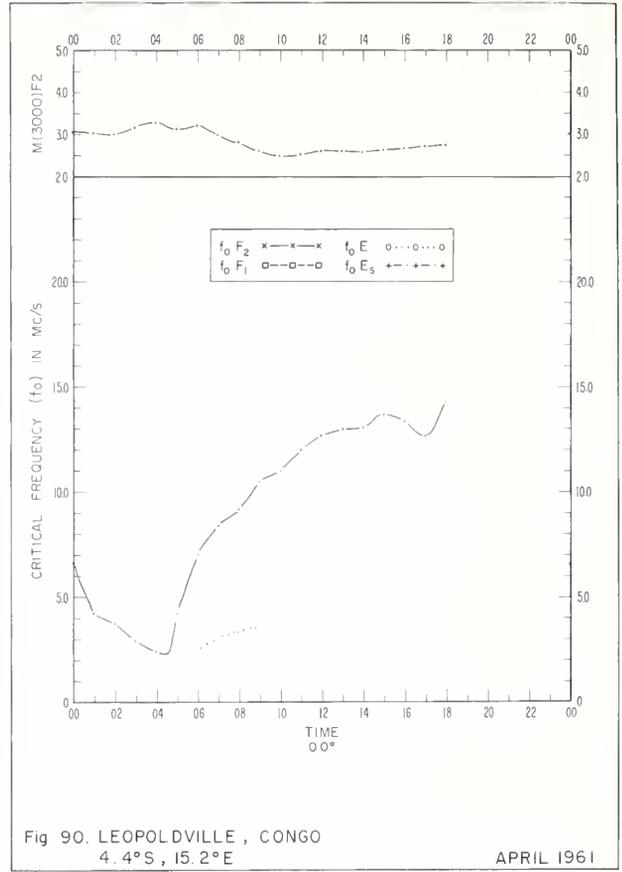
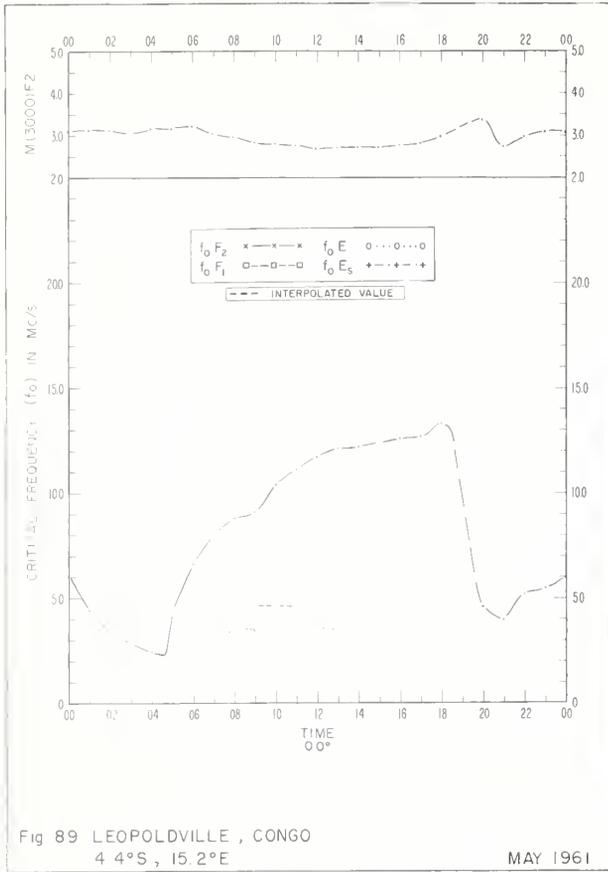


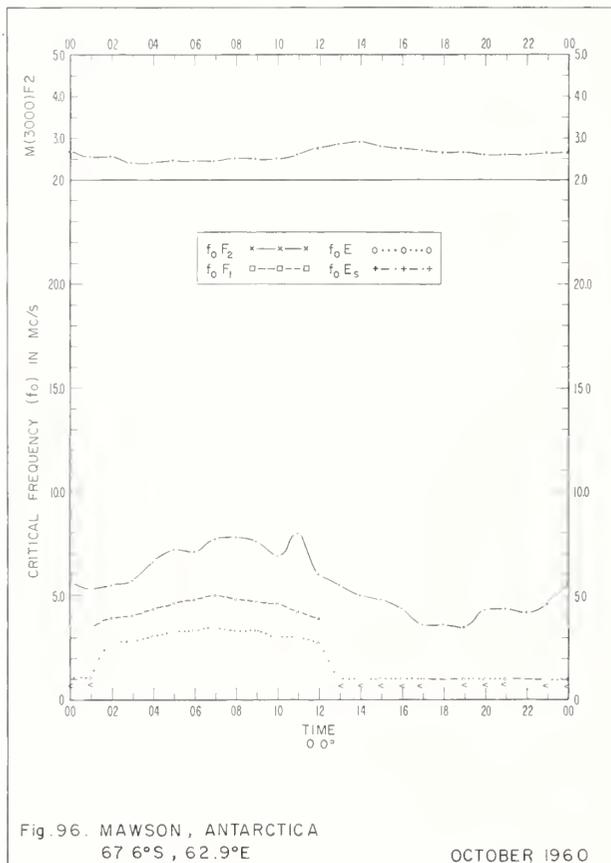
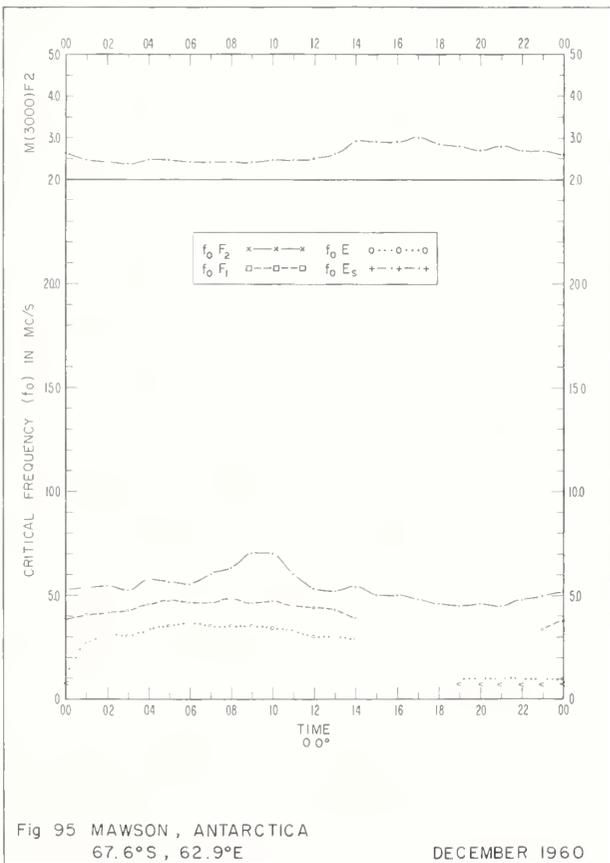
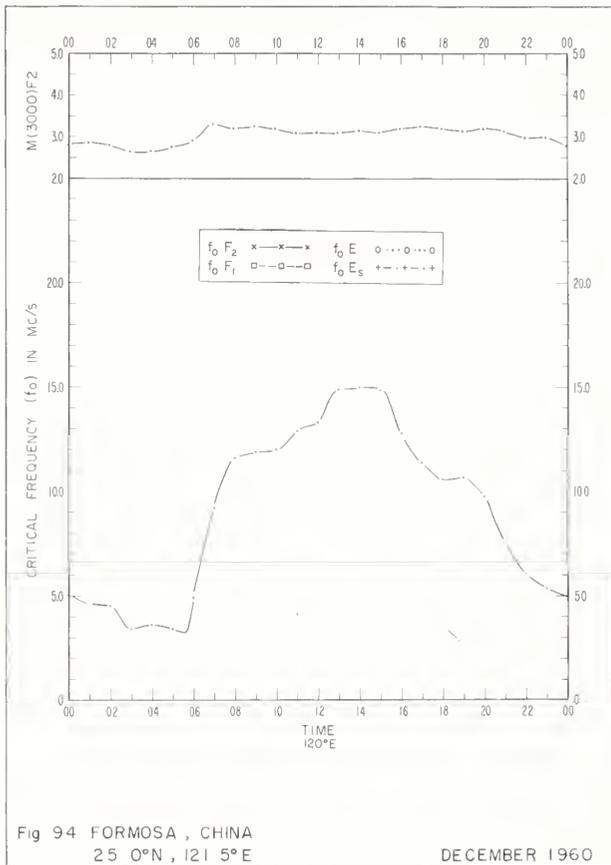
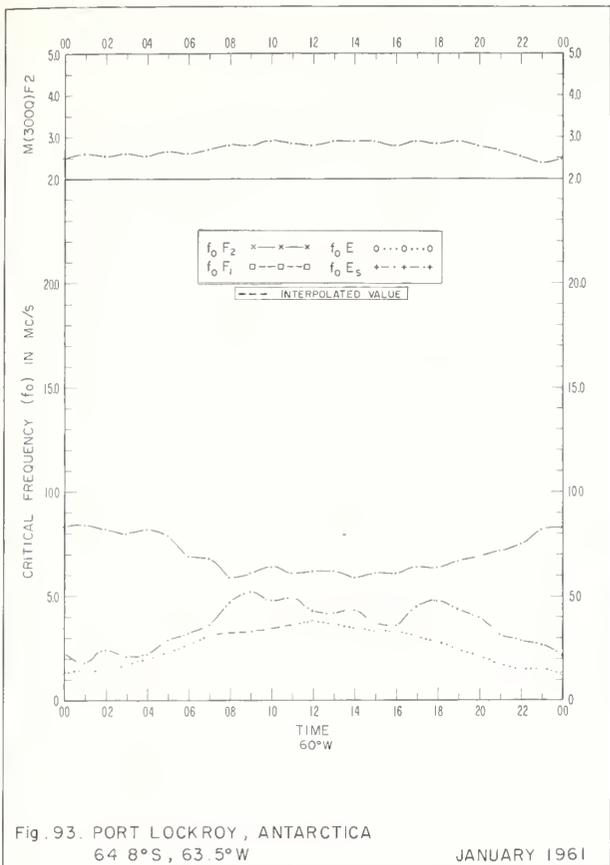
Fig. 80. CAPETOWN , UNION OF S. AFRICA
34.1°S, 18.3°E

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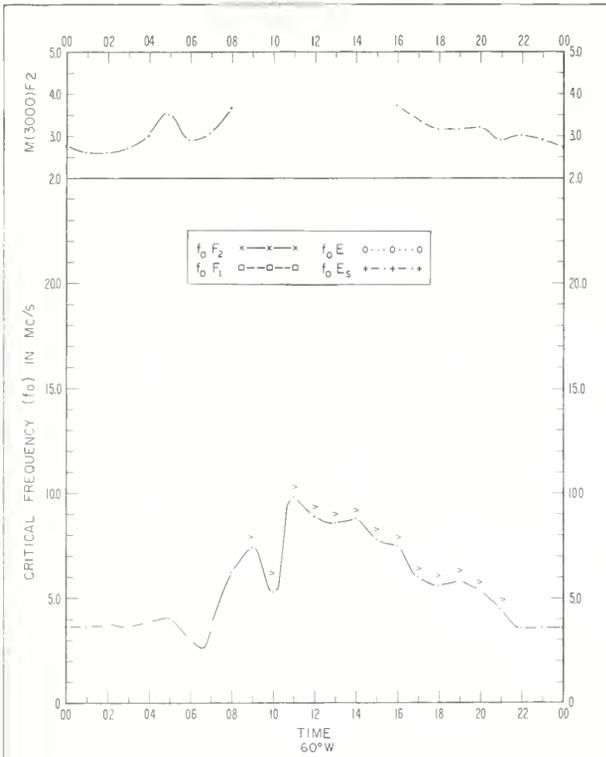


Fig 97. TRELEW, ARGENTINA
43. 2°S, 65. 3°W
AUGUST 1960

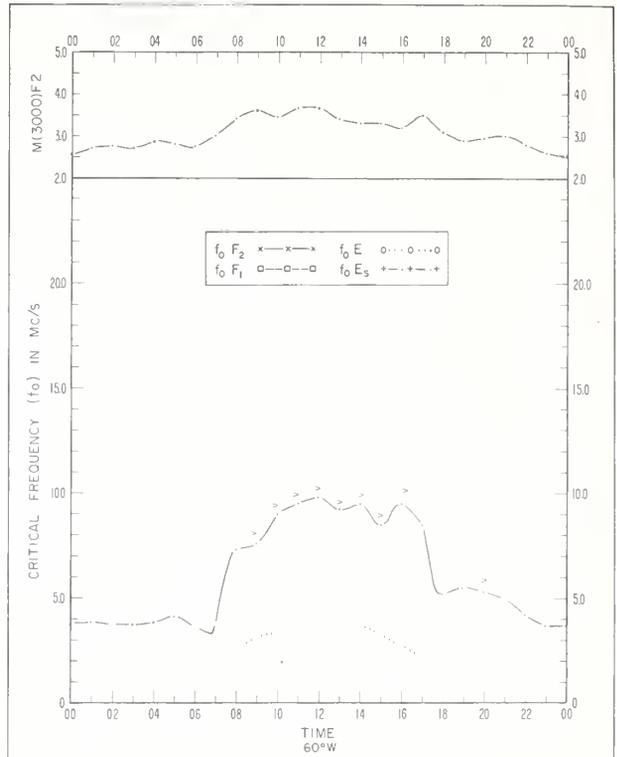


Fig 98. TRELEW, ARGENTINA
43. 2°S, 65. 3°W
JULY 1960

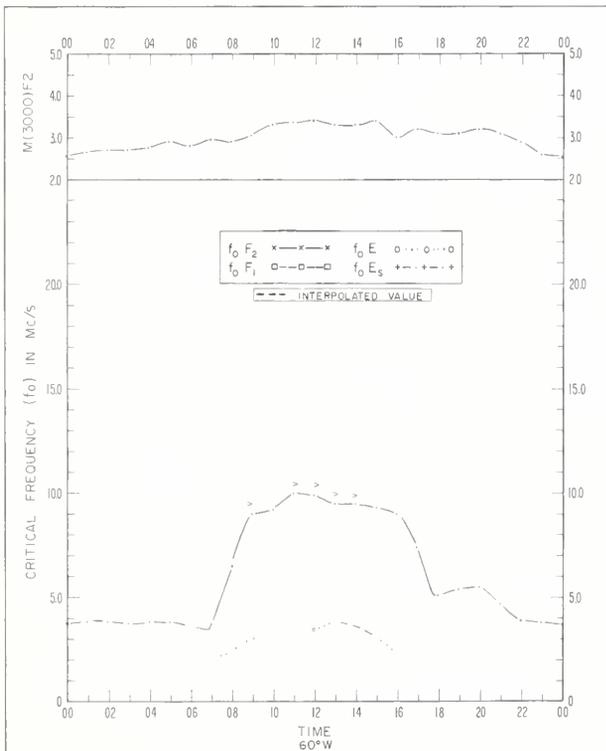


Fig 99. TRELEW, ARGENTINA
43. 2°S, 65. 3°W
JUNE 1960

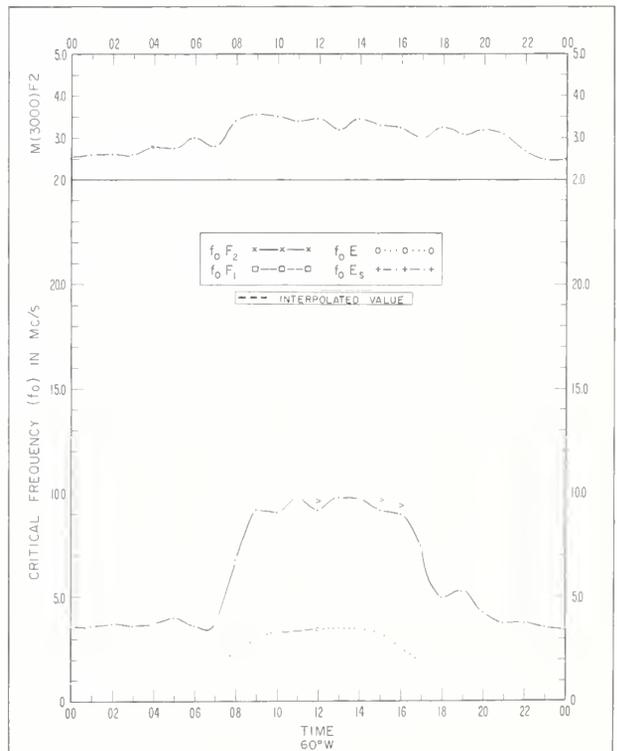


Fig 100. TRELEW, ARGENTINA
43. 2°S, 65. 3°W
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