COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF EXTERNAL AFFAIRS

AUSTRALIAN NATIONAL ANTARCTIC RESEARCH EXPEDITIONS

INTERIM REPORTS

18

Hourly Measurements of Ionospheric Characteristics Macquarie Island, 1956

By

R.L. DOWDEN, B.Sc.

★

ISSUED BY THE ANTARCTIC DIVISION, DEPARTMENT OF EXTERNAL AFFAIRS MELBOURNE
AUGUST, 1957.

INTRODUCTION

The following report presents hourly values and graphs of ionospheric characteristics observed during 1956 at Macquarie Island (Geographic co-ordinates 54° 29' S, 158° 58' E; Geomagnetic co-ordinates 61° S, 243° E.)

The equipment, originally designed and built at C.S.I.R.O. Radiophysics Laboratory, is, with minor modifications, as described by Higgs (1943) and is substantially similar to ionospheric recorders in use at Townsville, Brisbane, Canberra, Hobart and Watheroo. The recorder sweeps a frequency range from 1.0 to 13.0 Mc/s in one minute fifty five seconds, and is entirely automatic. The transmitter peak pulse power is approximately 1.5kw and the receiver sensitivity about 10 micro-volt. The record obtained is photographic, on standard 35mm film, and is normally made six times per hour. Height marks at 50km intervals, frequency marks at every 0.5 Mc/s from 1 to 10 Mc/s and at 11, 12 and 13 Mc/s, and the time are included on each record. The frequency time sweep is logarithmic.

The main modification in the equipment is a change in antenna switching circuits to make possible the use of a single wire Delta antenna (Cones, 1949). Two such antennas, one for transmitting resistors, are supported on a single 70 foot guyed steel mast.

The characteristics published in this report comprise hourly values and monthly median values for each of the following characteristics: foF2, (M3000)F2, h'F, hpF2, foF1, foE, fEs and h'F2.

A complete list of symbols used on the tabulation sheets is given in IPS - H1. foE is measured to the nearest 0.05 Mc, other frequencies to the nearest 0.1 Mc. M factors are measured to the nearest 0.05 of a unit. Heights are measured to the nearest 10km. Decimal points are not shown on the tabulation sheets. The unit used is shown on each tabulation sheet.

ACKNOWLEDGMENTS

Acknowledgment is made to the Ionospheric Prediction Service of the Commonwealth Observatory for the loan of the equipment and for help in the reduction and publication of results.

REFERENCES

Higgs, A.J. 1943 — Commonwealth Scientific and Industrial Research Organization, Radiophysics Laboratory Report No.P.D.25/2.

Cones, H.N. 1949 — Impedance Characteristics of Some Experimental Broad-band Antennas for Vertical Incidence Ionospheric Soundings, J. of Res. of N.B.S. 43 71, July 1949.

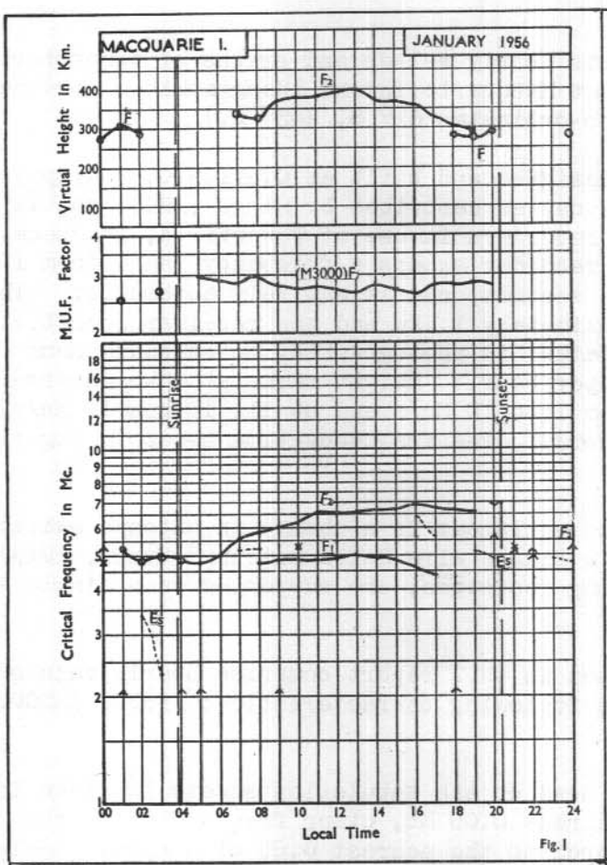

Fig. 1

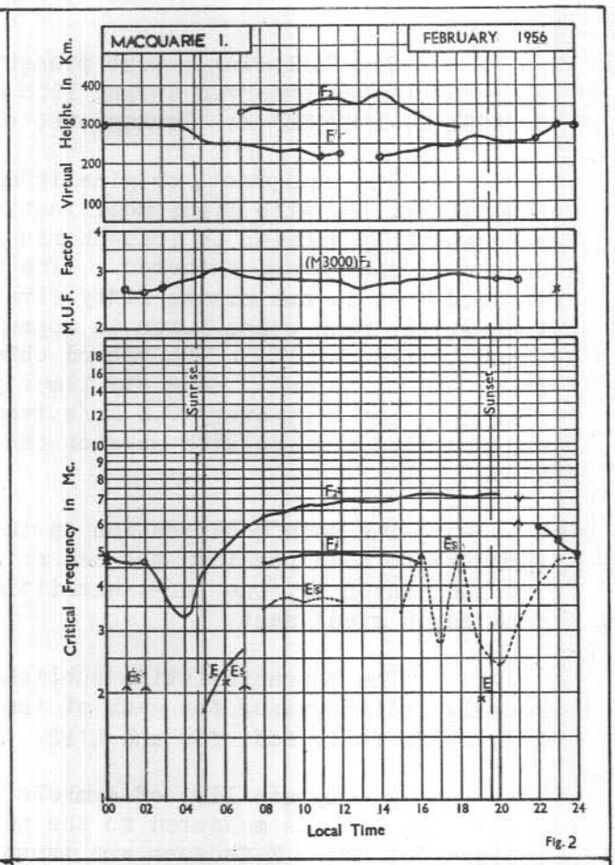

Fig. 2

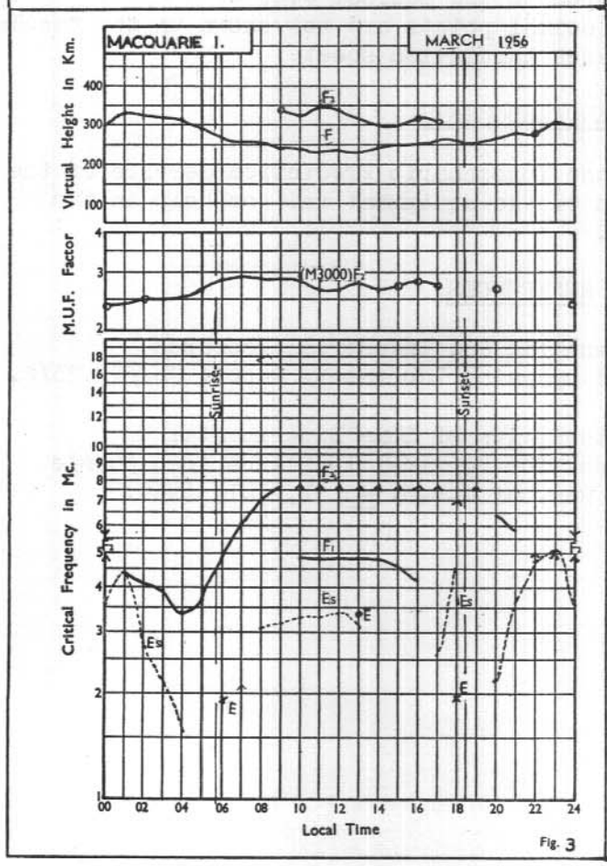

Fig. 3

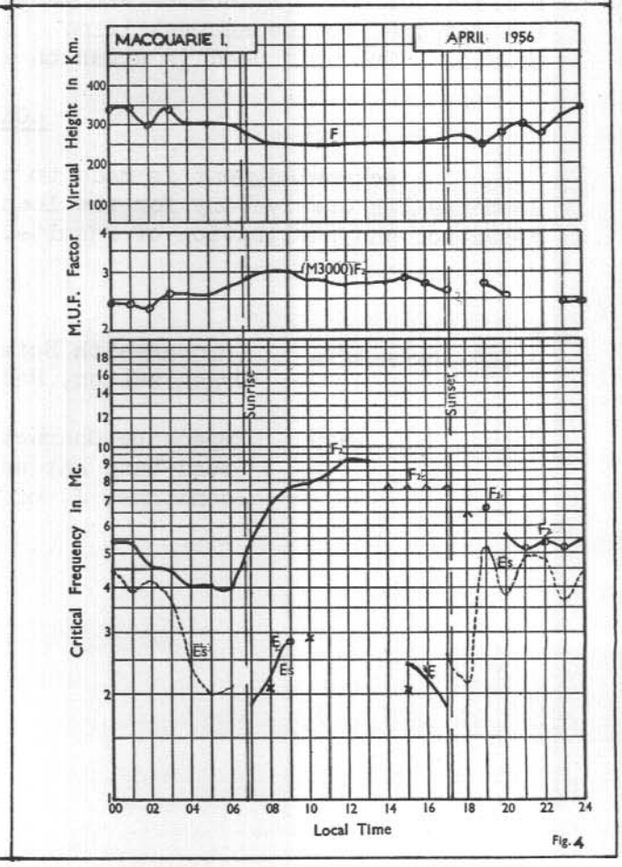

Fig. 4

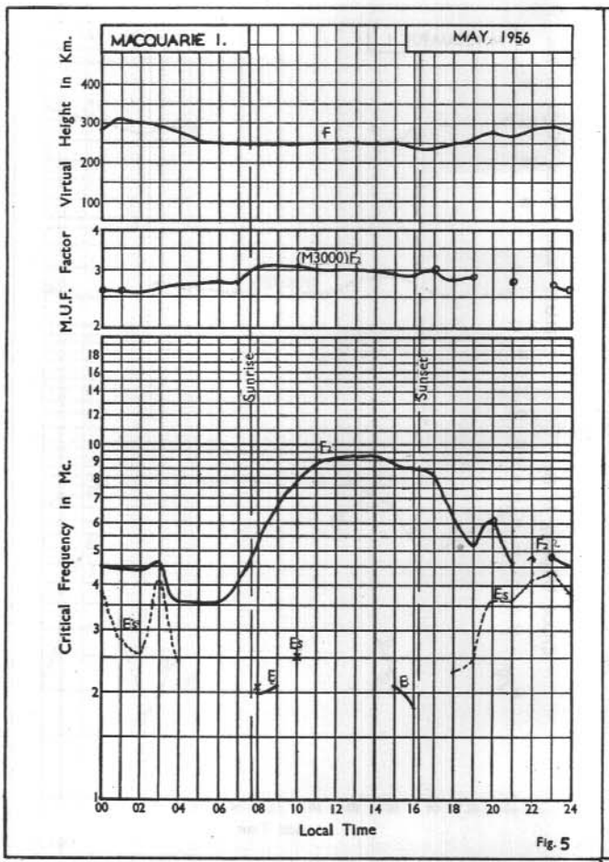

Fig. 5

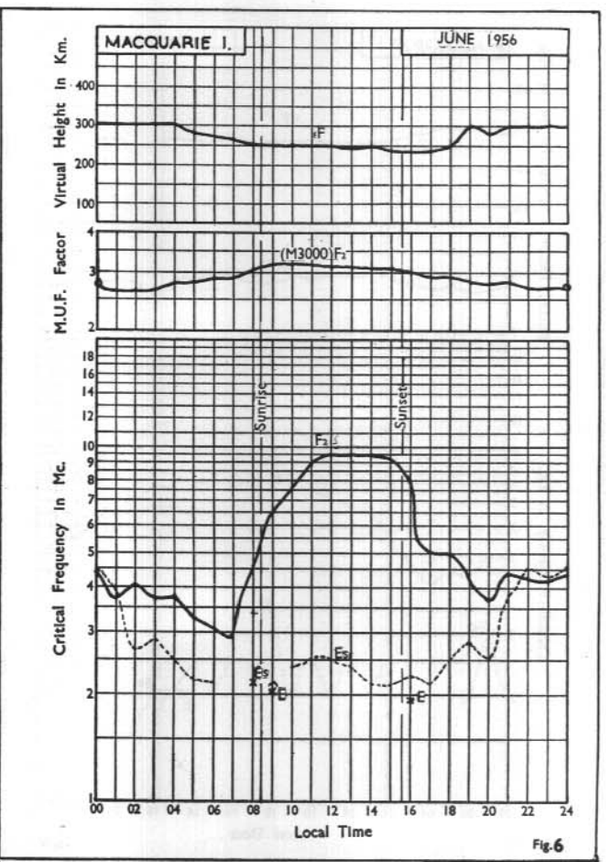

Fig.6

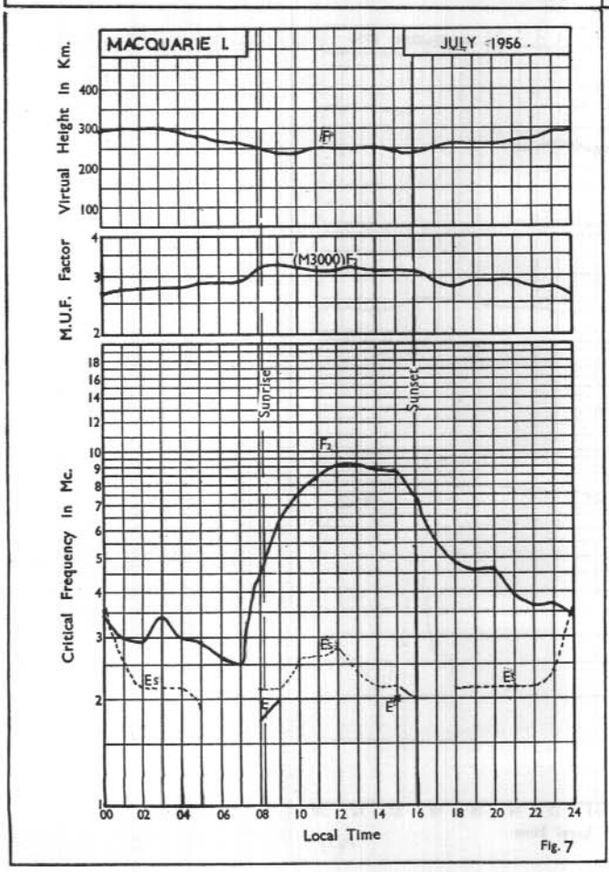

Fig. 7

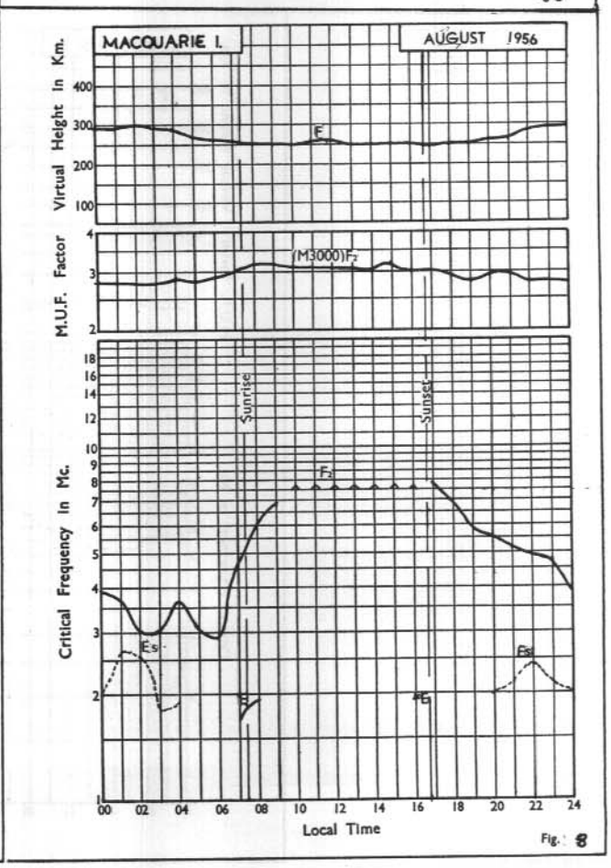

Fig. 8

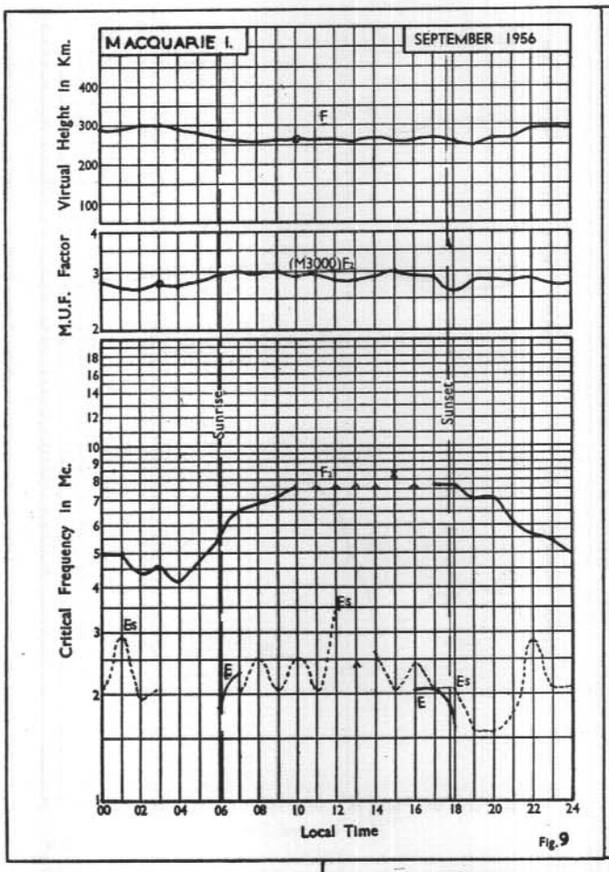

Fig.9

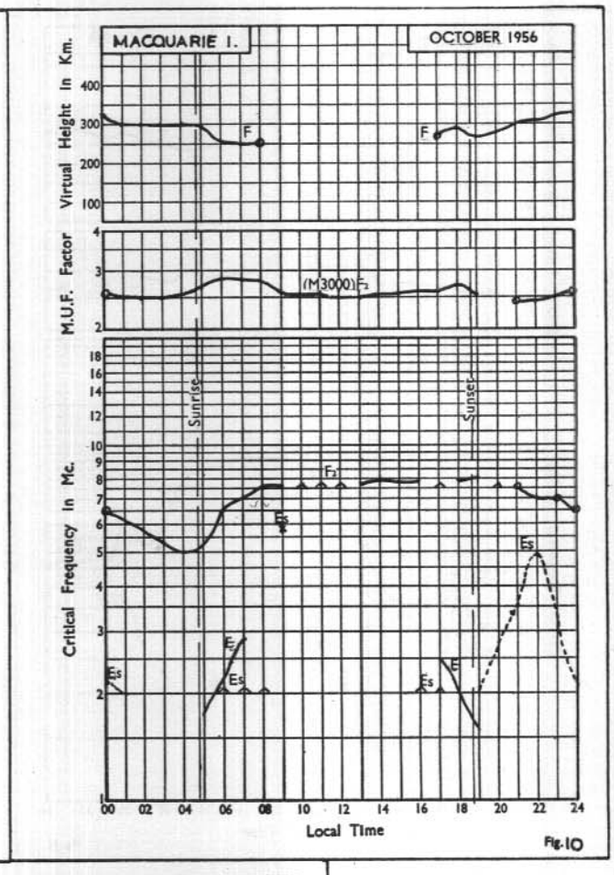

Fig.10

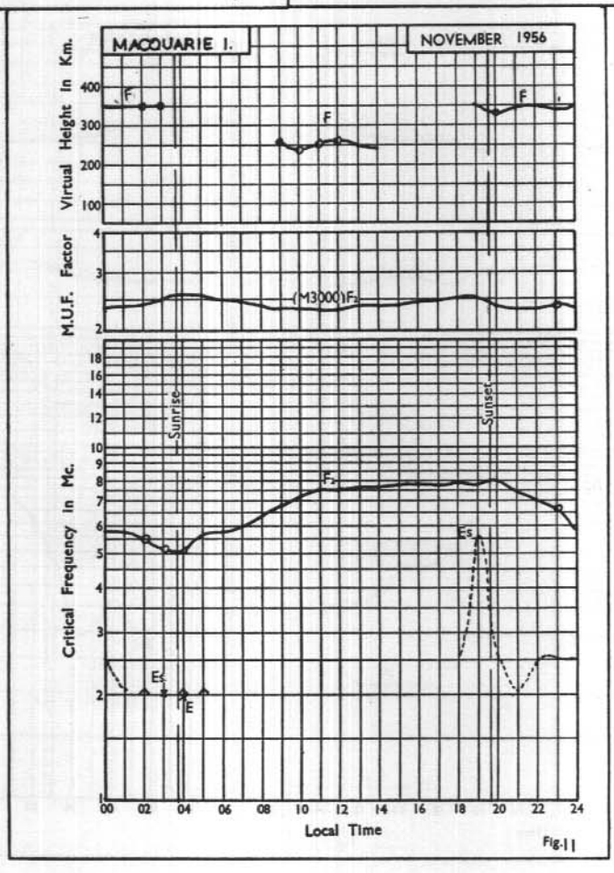

Fig.11

HOURLY VALUES OF foF2 OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	53f	54f	b	b	b	41	51	56	59	63	63	67	68	71	74	72	74	72	s	u 73f	s	a	a	b
2	b	b	b	b	b	48	49	46	b	b	b	b	b	b	62	62	68	a	71	d 59s	s	d 50s	51	a
3	d 53s	b	b	b	b	b	b	b	b	d 53s	d 54r	60	b	b	b	64	d 69s	b	69	57	b	b	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	67	d 55s	52	b	b	b
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	67	64	b	b	d 70s	d 62s	b	b	a
6	a	u 55s	48	b	b	53	b	b	58	58	58	b	b	b	b	67	b	b	d 59s	d 59s	d 59s	d 57s	d 59s	d 56r
7	b	b	b	b	b	b	b	b	b	58	57	d 60s	61	d 60s	67	67	d 66s	69	67	72	d 59s	d 54s	f	a
8	b	b	b	b	b	b	49	55	28	60	b	d 61s	d 59s	69	68	70	70	u 71s	70	72	d 59s	d 54s	a	a
9	54f	49f	c	u 56s	a	48	u 57s	a	a	d 60s	66	70	70	66	69	79	d 77c	d 77c	d 77c	d 77c	d 58c	b	b	b
10	b	b	b	b	b	b	51	58	57h	61	60	b	u 64s	r	b	64	d 54r	u 72f	b	b	b	b	b	b
11	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	60	a	b	b	b	b	b	b	b
12	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	57	60	b	a	b	b
13	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	d 58r	a	63	59	54	51	47	a
14	b	b	b	b	b	b	53	56	a	a	d 63r	d 60	63	60	d 59r	68	73	68	57	52	50	a	a	b
15	b	b	b	b	b	48	50	58	58	60	d 63r	67	68	67	66	70	72	72	72	d 62s	d 59s	a	a	b
16	d 57s	d 52	53	d 52r	49	u 59r	u 60s	64	68	68	c	69	u 65r	d 64s	d 53r	67	67	u 62r	67	75	69	a	u 72s	a
17	d 50	53	48	51	d 49r	57	59	46	a	67	64	c	68	73	70	70	71	d 70r	u 72s	70	d 58s	d 58s	b	a
18	a	d 49s	d 50s	d 49s	d 52s	51	44	d 58s	58	63	d 60r	66	69	71	b	77	67f	69	a	a	a	a	a	a
19	a	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	59	57	a	b	b	b	b
20	b	b	b	b	b	b	b	b	b	b	b	c	c	c	b	c	c	c	75f	48f	b	d 50s	u 50f	
21	a	53f	d 45s	40	36	47	50	57	65	68	66	65	65	65	67	65	68	65	68	67	70	u 69s	a	61
22	f	47	49f	50	b	48	c	c	c	c	65	66	66f	71	75	57	77	52	54	55	54	48	a	a
23	a	a	a	22f	29	31	39	40	42	45	b	46	47	48	52	52	53	54	54	57	55	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	58f	67	a	s	41f
28	a	a	a	a	b	a	b	b	b	b	46	b	b	53	67	54	a	49f	59	50	f	37	a	b
29	a	a	a	a	b	38	b	b	b	56	65	62	64	65	68	72	d 77c	d 77c	d 77c	47	a	a	a	a
30	a	b	b	b	b	b	b	b	b	46	48	52	53	f	58	58	64	66f	62f	66	u 57s	47f	a	a
31	a	b	b	b	b	b	b	55	62	56	62	60	59	58	61	60	66	66f	64f	a	49f	b	b	a
Median	d 53	u 53	u 49	u 50	u 49	48	50	56	58	60	62	66	65	66	67	67	69	68	67	66	d 57 e 59	d 52	d 50	-
No.	5	6	5	6	5	12	12	12	10	15	12	12	15	13	14	22	16	18	20	19	18	10	5	4

1a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	260	240f	b	b	b	c	265	285	270	285	255	290	275	265	280	270	265	285	s	u280f	s	a	a	b
2	b	b	b	b	b	260	265	c	b	b	b	b	b	b	280	285	275	a	275	s	s	s	270	a
3	s	b	b	b	b	b	b	b	b	s	r	275	b	b	b	260	s	b	285	265	b	b	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	280	s	275	b	b	b
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	280	280	b	b	s	s	b	b	a
6	a	u260	270	b	b	295	b	b	285	280	270	b	b	b	b	280	b	b	b	s	s	s	s	r
7	b	b	b	b	b	b	b	b	b	275	240	s	265	s	285	285	s	275	285	290	s	s	f	a
8	b	b	b	b	b	b	255	280	350	290	b	s	s	275	290	280	290	u280s	290	285	s	s	a	a
9	250f	265	c	u265s	a	a	u285s	a	a	s	280	285	285	270	280	255	c	c	c	c	c	b	b	b
10	b	b	b	b	b	b	235	300	225	270	270	b	u255s	r	b	260	r	u265f	b	b	b	b	b	b
11	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	265	a	b	b	b	b	b	b	b
12	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	280	280	b	a	b	b
13	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	r	a	285	300	270	265	255	a
14	b	b	b	b	b	b	295	280	a	a	r	r	275	260	r	270	265	280	275	300	245	a	a	b
15	b	b	b	b	b	275	290	285	300	280	r	280	285	265	275	280	275	275	290	s	c	a	a	b
16	s	r	280	r	290	u305r	u300s	275	285	280	c	290	u285r	s	r	275	270	u300r	280	290	285	a	u255s	a
17	s	250	275	280	r	310	290	290	a	290	290	c	285	280	285	275	285	r	u295s	290	s	s	b	a
18	a	s	s	s	s	300	255	s	295	280	r	275	280	270	b	260	245f	295	a	a	a	a	a	a
19	a	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	265	255	a	b	b	b	b
20	b	b	b	b	b	b	b	b	b	b	b	c	c	c	b	c	c	c	c	245f	f	b	s	u245f
21	a	255f	s	275	305	290	290	285	325	285	290	300	265	260	285	285	285	285	300	290	290	u300s	a	280
22	f	255	270f	280	b	300	c	c	c	c	255	270	245f	270	285	250	230	320	290	280	285	a	a	a
23	a	a	a	245f	285	310	325	345	370	345	b	365	365	350	250	250	255	285	280	285	280	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	255f	270	a	s	230f
28	a	a	a	a	b	a	b	b	b	b	360	b	b	245	245	a	a	255	255	a	f	240	a	b
29	a	a	a	a	b	265	b	b	b	265	290	280	285	275	275	260	c	c	c	a	a	a	a	a
30	a	b	b	b	b	b	b	b	b	b	245	265	260	f	285	285	285	u265f	285f	280	s	285f	a	a
31	a	b	b	b	b	b	b	285	300	275	295	270	265	270	280	275	265	265f	265f	a	280	b	b	a
Median	-	u255	-	u275	-	300	290	285	300	280	275	280	275	270	280	275	270	280	280	285	280	-	-	-
No.	2	6	4	5	3	10	12	10	10	13	12	12	15	13	14	21	14	15	18	15	9	4	3	3

1b

I Unit 0.01

HOURLY VALUES OF h'F OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	310	b	b	b	a	b	c	c	c	c	c	c	b	c	c	c	c	c	c	a	a	a	b
2	b	b	b	b	b	c	c	c	b	b	b	b	b	b	c	c	c	a	320	a	a	c	c	a
3	c	b	b	b	b	b	b	b	b	c	c	c	b	b	b	c	1	b	300	c	b	b	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	c	c	b	b	b
6	a	c	300	b	b	c	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c
7	b	b	b	b	b	b	b	b	b	b	c	c	b	b	b	b	c	c	320	280	a	a	a	a
8	b	b	b	b	b	b	c	c	1	c	b	c	b	b	c	c	c	c	300	280	320	310	a	a
9	290	320	c	b	a	a	b	a	a	a	a	a	b	b	b	b	b	b	c	c	c	b	b	b
10	b	b	b	b	b	b	c	c	c	b	a	b	b	b	b	b	b	b	b	b	b	b	b	b
11	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	b	b	b	b	b	b	b
12	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	b	b	b	a	b	b
13	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	b	a	b	300	c	c	c	a
14	b	b	b	b	b	b	c	c	a	a	a	a	c	c	c	c	c	c	c	c	c	a	a	b
15	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	b	c	c	c	a	a	b
16	290	260	270	260	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	280	a	280	a
17	280	300	290	230	250	u220c	c	c	a	c	c	c	c	c	c	c	c	c	c	c	260	270	b	a
18	a	a	a	c	c	a	a	a	a	a	c	c	c	c	b	c	c	c	a	c	a	a	a	a
19	a	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	b	b	b	b
20	b	b	b	b	b	b	b	b	b	b	b	c	c	c	b	c	c	c	c	250	a	b	310	350
21	a	310	270	270	270	b	250	230	b	220	b	200	360	320	b	200	220	210	240	260	260	250	a	260
22	220	a	320	b	b	270	c	c	c	c	200	b	250	220	b	b	a	250	a	350	320	a	a	a
23	a	a	a	b	330	280	250	220	210	220	b	230	340	a	b	a	a	a	270	a	280	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	270	a	a	a	380
28	a	a	a	a	b	a	b	b	b	b	240	b	b	b	b	a	a	c	a	a	a	a	a	b
29	a	a	a	a	b	250	b	b	b	b	b	230	b	b	b	b	230	b	260	a	a	a	a	a
30	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	230	220	b	b	280	300	310	a	a
31	a	b	b	b	b	b	b	b	220	b	b	b	b	b	b	230	b	230	270	a	310	b	b	a
Median	u280	u310	u290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	u285	u280	u290	-	-	-
No.	5	5	5	3	3	4	2	2	2	2	2	3	3	2	0	3	3	3	8	8	8	4	2	3

2a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	370	b	b	b	c	b	390	g	350	g	g	390	400	350	380	380	350	s	340	s	a	a	b
2	b	b	b	b	b	c	c	c	b	b	b	b	b	b	g	380	350	a	350	s	s	s	390	a
3	s	b	b	b	b	b	b	b	b	s	r	c	b	b	b	g	s	b	330	380	b	b	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	s	c	b	b	b
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	370	380	b	b	s	s	b	b	a
6	a	390	c	b	b	c	b	b	g	g	g	b	b	b	b	360	b	b	s	s	s	s	s	r
7	b	b	b	b	b	b	b	b	b	g	g	s	g	s	g	360	s	350	300	330	s	s	f	a
8	b	b	b	b	b	b	c	g	1	g	b	s	s	380	g	310	340	330	340	320	s	s	a	a
9	350	360	c	350	a	a	320	a	a	s	380	310	350	g	370	410	c	c	c	c	b	b	b	b
10	b	b	b	b	b	b	500	310	g	g	g	b	430	r	b	g	r	350	b	b	b	b	b	b
11	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	420	a	b	b	b	b	b	b	b
12	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	350	340	b	a	b	b
13	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	r	a	340	320	360	390	c	a
14	b	b	b	b	b	b	300	350	a	a	r	r	390	g	r	380	400	310	300	320	c	a	a	b
15	b	b	b	b	b	c	c	350	320	g	r	g	380	400	380	360	370	360	330	s	c	a	a	b
16	s	r	360	r	c	300	320	350	330	350	c	330	340	s	r	360	370	330	350	330	330	a	430	a
17	s	400	c	340	r	280	350	340	a	340	340	c	350	350	360	370	350	r	340	340	s	s	b	a
18	a	s	s	s	s	310	400	s	310	g	r	380	380	400	b	400	390	290	a	a	a	a	a	a
19	a	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	400	g	a	b	b	b	b
20	b	b	b	b	b	b	b	b	b	b	b	c	c	c	b	c	c	c	c	350	a	b	s	400
21	a	360	s	330	300	350	320	300	300	340	340	300	g	410	350	350	350	350	330	320	330	300	a	350
22	f	380	350	b	b	300	c	c	c	c	450	390	g	370	430	430	520	g	300	350	340	a	a	a
23	a	a	a	400	350	300	260	230	240	g	b	230	b	b	g	g	g	g	350	350	330	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	330	330	a	s	400
28	a	a	a	a	b	a	b	b	b	b	240	b	b	g	470	a	a	g	410	a	f	430	a	b
29	a	a	a	a	b	380	b	b	b	g	320	g	350	390	390	360	c	c	c	a	a	a	a	a
30	a	b	b	b	b	b	b	b	b	b	g	g	g	g	g	g	330	320	310	330	s	350	a	a
31	a	b	b	b	b	b	b	g	330	g	g	g	g	g	g	400	370	330	340	a	350	b	b	a
Median	-	u375	-	-	-	u300	u320	u345	u315	-	u340	u320	u380	u395	u375	370	370	340	340	330	u330	-	-	-
No.	2	6	2	4	2	7	8	8	6	4	6	6	9	8	8	17	13	12	17	15	7	4	2	3

2b

Unit 1 km

HOURLY VALUES OF foF1 OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									51	49	51	50	51	53	50	49	49	c	1					
2						c	c	c	b	b	b	b	b	b	49	49	1	a						
3										49	50	49	b	b	b	48	1	b						
4						c	c	c	c	c	c	c	c	c	c	c	c	c						
5						c	c	c	c	c	c	c	c	c	c	49	46	b	b	c				
6									47	48	49	b	b	b	b	48	b	b	b	b				
7							b	b	b	50	52	51	51	50	49	49	49	47						
8							c	c	1	49	b	51	49	52	51	501	481	c						
9							b	a	a	49	51	52	49	52	50	48	b	b	a	c				
10							c	e	49	48	49	h	49	b	b	49	46	45	h	b				
11							b	b	b	b	h	h	h	b	b	b	a	b						
12							b	b	b	b	b	h	b	b	h	b	b	a	b	b				
13							b	b	b	b	b	h	h	b	h	c	49	a	b	b				
14							c	c	a	a	49	49	51	51	50	49	49	c	c	c				
15							c	c	46	49	49	50	49	52	49	49	49	b	a	c				
16							c	48	48	49	c	49	49	52	49	49	48	c	c	c				
17							c	47	a	49	49	c	49	50f	50	f	47	47	c	c				
18							a	a	u 471	49	48	49	50	49	b	48	44	c	a	c				
19							b	b	h	b	b	h	b	b	b	b	b	44	49	c				
20							b	b	h	b	b	c	c	c	b	c	c	c	c					
21							1	44	49	48	49	50	51	49	45	48	48	44	391					
22							c	c	c	c	48	49	48	47	b	b	a	39	a					
23															47	46	44	a	41					
24							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
25							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
26							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
27							c	c	c	c	c	c	c	c	c	c	c	c	c	33				
28							b	b	b	b	b	b	b	45	b	a	a	c	a	a				
29							b	b	b	47	47	48	48	50	49	47	46	b	1	a				
30							b	b	b	b	44	46	47	49	47	46	45	b	b					
31							b	b	43	46	48	47	b	47	46	43	46	39	38					
Median								-	48	49	49	49	49	50	49	48	46	44	-	-				
No.								3	8	14	15	14	14	15	14	18	16	7	4	1				

3a

Unit 0.1 Mc.

HOURLY VALUES OF foE OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						a	b	c	c	c	c	c	c	b	c	c	c	c	c	c				
2						c	c	c	b	b	b	b	b	b	c	c	c	a	c	a				
3						b	b	b	b	c	c	c	b	b	b	c	c	b	c	c				
4						c	c	c	c	c	c	c	c	c	c	c	c	c	c	c				
5						c	c	c	c	c	c	c	c	c	c	b	b	b	b	c				
6						b	b	b	b	b	b	b	b	b	b	b	b	b	b	b				
7						b	b	b	b	b	c	c	b	b	b	b	a	c	c	c				
8							c	c	c	c	b	c	b	b	c	c	c	c	c	c	180			
9							b	a	a	a	a	a	b	b	b	b	b	b	c	c				
10							c	e	c	b	a	b	b	b	b	b	b	b	b	b				
11							b	b	b	b	b	b	b	b	b	b	b	b	b	b				
12							b	b	b	b	b	b	b	b	b	b	b	b	b	b				
13							b	b	b	b	b	b	b	b	b	c	b	a	b	b				
14							c	c	a	a	a	a	c	c	c	c	c	c	c	c				
15						c	c	c	c	c	c	c	c	c	c	c	c	b	c	c	195			
16					u225r	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	185	a		
17							c	c	a	c	c	c	c	c	c	c	c	c	c	215	175			
18								a	a	a	c	c	c	c	b	c	c	c	a	c				
19							b	b	b	b	b	b	b	b	b	b	b	b	b	c				
20							b	b	b	b	b	c	c	c	b	c	c	c	c	a				
21					190	b	b	b	b	b	b	b	b	b	b	b	330	b	a	a				
22						a	c	c	c	c	b	b	e	b	b	b	a	325	a					
23					170	200	245	280	310	340	b	b	b	b	b	a	a	b	a	a				
24							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
25							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
26							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
27							c	c	c	c	c	c	c	c	c	c	c	c	c	205				
28							b	b	b	b	e	b	b	b	b	b	b	c	a	a				
29							b	b	b	b	b	b	b	b	b	b	b	b	r	a				
30							b	b	b	b	b	b	b	b	b	b	b	b	b	205				
31								b	310	b	b	b	b	b	b	b	b	b	r	b				
Median					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
No.					3	1	1	1	2	1	0	0	0	0	0	0	1	1	0	3	4			

3b

Unit 0.01 Mc.

HOURLY VALUES OF fEs OBSERVED DURING JANUARY 1955 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	e	e	h	h	b	d 21c	b	c	49	49	57	c	c	b	c	c	c	d 21c	d 21c	g	d 21c	d 58s	d 54s	b
2	b	b	b	b	b	d 21c	d 21c	d 21c	h	b	h	b	b	b	c	c	c	d 77c	c	52	49	d 21c	c	48
3	c	h	b	b	b	b	b	b	b	c	c	c	b	b	b	c	c	b	d 21c	g	h	h	d 77c	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	d 21c	c	c	h	h	b
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	49	b	b	h	c	c	h	h	58
6	59	b	e	b	b	19	b	h	b	b	b	b	b	b	b	b	b	b	h	b	h	h	d 77c	d 21c
7	b	b	h	b	b	b	b	b	b	b	c	c	b	b	b	b	c	c	c	d 77c	54	d 21c	d 21c	69
8	h	b	h	b	b	b	c	c	c	c	b	c	h	h	c	c	54	20	19	19	g	e	d 77c	52
9	e	e	d 21c	b	d 21c	57	d 21c	59	60	d 21c	52	d 21c	b	h	h	b	b	h	c	c	d 21c	h	h	h
10	b	b	b	b	h	h	c	e	c	h	53	b	h	h	h	b	h	h	b	b	b	h	h	h
11	b	h	b	h	b	b	b	h	b	b	h	h	b	h	h	h	77	h	h	h	h	h	h	b
12	b	b	b	h	h	b	b	b	b	b	h	b	b	b	h	h	b	58	b	b	h	b	53	h
13	b	h	b	b	h	b	h	b	b	h	b	b	b	b	h	c	b	54	b	b	c	c	c	49
14	b	h	b	b	b	h	c	c	d 77c	d 77c	58	61	c	c	c	c	c	c	d 21c	d 21c	d 21c	53	53	h
15	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	h	c	c	g	d 21c	50	h
16	e	e	e	e	g	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	g	59	d 21c	62
17	e	e	e	e	e	g	c	52	62	c	c	c	c	c	c	c	c	c	c	g	g	e	b	51
18	49	d 21c	49	c	d 21c	49	54	57	52	49	d 21c	c	c	c	h	c	c	c	52	52	64	d 77c	62	49
19	59	52	48	57	b	b	h	h	h	h	h	h	h	h	h	h	h	h	h	57	h	h	h	h
20	h	b	h	b	h	h	h	b	h	b	h	c	c	c	b	c	c	c	c	24	75	b	21	26
21	d 49s	d 21c	s	e	g	b	h	h	h	b	h	h	h	b	h	h	g	h	32	53	13	47	d 58s	e
22	e	48	d 21c	h	h	d 21c	c	c	c	c	h	h	e	b	h	h	d 70	g	50	59	52	53	47	48
23	47	19	34	33	e	21	g	g	g	g	h	b	b	58	58	54	68	70	54	43	e	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	g	70	59	s	53
28	50	59	35	d 48s	d 21c	55	b	h	h	h	e	b	h	h	h	77	59	d 21c	33	69	d 77c	46	d 49s	b
29	48	48	d 49s	d 47s	d 21c	e	h	h	h	b	h	b	b	b	h	h	h	b	g	56	d 59s	69	d 47s	d 47s
30	d 57s	h	h	h	b	h	b	h	b	b	b	b	b	b	b	h	b	b	b	g	d 21c	d 21c	d 47s	d 47s
31	d 48s	b	b	b	b	b	b	h	g	b	b	b	h	h	b	h	b	b	b	d 77c	48	b	b	34
Median	48	d 21	34	23	d 21	d 21		52	52	d 21	53						64	56	d 21	52	49	53	d 52	49
No.	14	11	8	7	8	10	4	5	7	5	5	2	1	1	1	3	6	6	11	17	15	11	16	13

4a

Unit 0.1 Mc.

HOURLY VALUES OF h'F2 OBSERVED DURING JANUARY 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									400	350	390	310	390	400	330	370	350	330						
2									b	b	b	b	b	b	400	380	1	a						
3									b	c	c	400	b	b	b	430	370	b						
4									c	c	c	c	c	c	c	c	c	c						
5									c	c	c	c	c	c	c	370	380	b						
6									370	390	420	b	b	b	b	360	b	b	b					
7									b	430	g	390	420	s	360	360	360	1						
8							e	380	1	360	b	s	390	380	360	310	330	300						
9							320	a	a	440	380	310	350	400	370	390	300	300	260	240				
10							c	300	420	400	400	b	430	r	b	410	380	350						
11								b	b	b	b	b	b	b	b	420	a	b						
12							b	b	b	b	b	b	b	b	b	b	b	a	350	320				
13							b	b	b	b	b	b	b	b	b	c	b	a	300	300				
14							300	c	a	a	r	380	390	460	370	380	370	300	300					
15							c	340	1	400	350	380	350	400	380	350	350	330	290	c				
16							320	350	310	340	c	330	340	s	370	350	360	330	310	280				
17							330	330	a	340	340	c	350	350	360	350	310	340	310	290				
18								340	310	340	350	380	380	390	b	370	390	290	a					
19							b	b	b	b	b	b	b	b	b	b	b	400	s					
20							b	b	b	b	b	c	c	c	b	c	c	c	c					
21							1	300	300	320	340	300	400	400	350	350	350	320	300					
22							c	c	c	c	450	390	440	360	410	b	a	280	a					
23															480	500	430	390	350					
24							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
25							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
26							c	c	c	c	c	c	c	c	c	c	c	c	c	c				
27							c	c	c	c	c	c	c	c	c	c	c	c	c	330				
28							b	b	b	b	b	b	b	490	470	a	a	430	a	a				
29							b	b	b	400	320	330	350	390	390	350	340	310	290	a				
30							b	b	b	b	520	470	480	450	380	380	320	310	300					
31							b	370	330	370	340	400	360	400	380	400	370	330	330					
Median							-	u340	u330	370	380	380	390	400	375	370	360	330	300	u295				
No.							4	8	7	13	13	13	15	13	16	20	17	17	12	6				

4b

Unit 1 km

HOURLY VALUES OF foF2 OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	b	a	b	b	b	b	46	b	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
2	o	b	b	b	b	b	b	b	52	51f	54	52	55	53	53	59	63f	65	57	45f	46f	f	o	a
3	a	31	a	a	b	b	b	b	b	b	b	56	b	56	60	59	61	62	63	62	s	a	a	a
4	a	32	30	28	28	b	b	54	58	63	63	71	69	70	67	70	74	75	u81o	s	65f	f	52f	a
5	a	46	48f	a	b	b	49	55	58	61	59	69	63	d62s	67	69	74	75	d72s	74	a	d61s	d59s	48f
6	u48s	47f	f	34	33	37j	51	54	b	66f	68	65	68	67	67	67	72	74	66	71	67f	u58s	b	a
7	s	a	b	b	b	b	52	59	65	69	67	o	73	74	72	77	77	79	80o	75	a	u72s	s	u54s
8	a	43	u38j	34	23	45	52	58	63	67	71	68	73	72	o	68	67	68	74	u71s	72	68	u61s	47
9	a	s	47f	39	35	39	51	58	64	64	65f	71	72	72	75	75	71	o	o	o	o	o	o	o
10	o	o	o	o	o	o	o	o	o	o	o	o	o	72	72	71	72	73	75	d70s	d75s	u68s	s	a
11	f	u49f	f	u38j	33f	s	48	58	b	65	74	76	74	o	73	78	77	78	77	78	s	f	a	a
12	b	b	a	a	33	b	46	52	o	o	o	70	71	b	78	60	61	b	a	40	b	b	a	b
13	a	b	a	b	31	40	48	51	53	55	52	53	59	56	55	57	56	58	59	f	f	f	b	b
14	b	b	b	b	34	41	o	o	o	o	o	66	66	68	66	70	72	71	70	73	74	62	s	s
15	48f	47	u49f	37	32	44	52	59	59	62	69	66	68	69	u68s	69	a	68	71	72	d67s	u60f	u58f	s
16	49f	u46f	35	f	u48f	48f	s	55f	79	70	72	72	75	75	73	78	d77o	u81o	78	70	u61s	s	s	a
17	a	a	b	b	a	b	b	51	51	o	o	57	57	58	58	60	63	63	o	64	s	s	s	b
18	f	u48f	48f	38	37	57	62	64	66	75	67	67	69	68	70	73	75	d70s	s	d70s	b	b	b	b
19	s	d47s	d49s	u38s	s	s	s	58	64	64	66	69	67	68	68	69	o	o	o	o	o	b	a	b
20	a	a	a	d50s	49f	49f	54	63	63	68	71	72	68	69	68	68	69	68	u71s	u70s	u72s	s	o	o
21	o	o	o	b	s	49	54	65	63	72	68	71	72	72	75	75	u73s	s	d70s	d77o	75	d65s	u63s	59
22	d50s	48	43	s	u38j	s	51	u61s	64	65	69	63	72	69	67	77	78	s	79	a	a	s	s	s
23	a	a	s	33	32	35	48	53	57	59	62	59	59	62	62	b	b	b	b	b	b	b	b	b
24	59	s	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d77o	d59s	59	u65s
25	o	o	o	o	o	o	o	o	o	o	o	o	b	b	b	b	b	b	b	b	b	b	a	a
26	a	b	a	a	b	b	b	b	b	b	b	b	b	b	b	66	71	73	74	d60s	a	a	b	b
27	b	b	b	b	29	b	b	b	58	60	66	67	70	72	b	d77o	76	o	o	o	o	o	o	o
28	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	75	78	79	69	50f	53f	a	a	a
29	a	a	a	o	o	o	o	o	o	o	o	o	b	o	o	o	67	56	59	a	a	a	a	a
30																								
31																								
Median	u 49	47	u 47	38	33	44	51	58	63	64	67	67	69	69	68	70	72	72	71	71	72	d 61 e 69	u 59	u 54
No.	5	11	9	10	15	11	14	19	17	18	18	21	21	20	21	24	23	18	17	15	11	9	5	5

5a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	b	a	b	b	b	b	300	b	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
2	o	b	b	b	b	b	b	b	285	265	270	280	275	265	245	255	260	265	265	245	275	f	o	a
3	a	265	a	a	b	b	b	b	b	b	b	275	b	265	275	265	265	280	270	275	s	a	a	a
4	a	270	275	260	275	b	b	285	300	300	280	295	285	300	290	285	290	280	u285o	s	275f	f	260f	a
5	a	270	260f	a	b	b	300	320	285	285	315	300	300	s	285	275	295	295	s	280	a	s	s	265
6	u245s	f	f	280	295	290	315	285	b	f	290	285	300	285	295	300	290	285	295	290	280f	u275s	b	a
7	s	a	b	b	b	b	315	325	300	290	290	o	290	295	295	300	290	290	295o	285	a	u290s	s	u260s
8	a	270	u270j	290	290	310	330	325	300	210	300	300	285	285	o	285	295	290	300	u310s	300	300	u290s	u275s
9	a	s	f	u260s	280	300	310	310	305	290	f	280	295	295	290	290	285	o	o	o	o	o	o	o
10	o	o	o	o	o	o	o	o	o	o	o	o	o	295	295	290	290	285	295	s	s	u280s	s	a
11	f	u285f	f	u285j	285	s	315	300	b	300	300	295	295	o	285	295	290	300	290	295	s	f	a	a
12	b	b	a	a	265	b	285	275	o	o	o	275	255	b	255	260	255	b	a	245	a	b	a	b
13	a	b	a	b	280	285	285	280	265	265	235	235	265	255	260	260	265	285	260	f	f	f	b	b
14	b	b	b	b	275	315	o	o	o	o	o	280	285	290	275	275	285	300	290	285	290	280	s	s
15	f	260	u290f	275	280	290	320	300	320	280	300	280	290	290	u290s	280	a	280	290	290	s	f	f	s
16	255f	f	260	f	f	u315f	s	f	295	320	295	265	280	265	270	245	o	280	295	260	u270s	s	s	a
17	a	a	b	b	a	b	b	270	285	o	o	255	255	250	250	260	260	285	o	275	s	s	s	b
18	f	u255f	255f	270	280	300	310	280	280	270	275	260	285	275	270	275	260	s	s	s	b	b	b	b
19	s	s	s	u245s	s	s	s	290	280	295	270	280	270	270	270	270	o	o	o	o	o	b	a	b
20	a	a	a	s	u260f	270f	280	285	285	280	285	280	260	265	270	265	265	275	u290s	u275s	u285s	s	o	o
21	o	o	o	b	s	285	275	285	285	295	285	285	275	265	280	280	u285s	s	s	o	300	s	u285s	265
22	s	260	240	s	245	s	300	u295s	300	265	285	255	270	275	250	265	270	s	285	a	a	s	s	s
23	a	a	s	255	255	275	285	280	280	280	260	255	255	250	b	b	b	b	b	b	b	b	b	b
24	260	s	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	s	250	u240s
25	o	o	o	o	o	o	o	o	o	o	o	o	b	b	b	b	b	b	b	b	b	b	a	a
26	a	b	a	a	b	b	b	b	b	b	b	b	b	b	b	255	265	265	265	s	a	a	b	b
27	b	b	b	b	260	b	b	b	290	285	280	280	265	265	b	o	285	o	o	o	o	o	o	o
28	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	270	270	295	280	245f	265f	a	a	a
29	a	a	a	o	o	o	o	o	o	o	o	o	b	o	o	o	275	265	280	a	a	a	a	a
30																								
31																								
Median	-	u270	u260	u270	280	290	305	290	285	285	285	280	280	270	275	275	280	285	290	280	u280	u280	-	265
No.	3	8	7	9	14	11	14	18	17	17	17	21	21	20	20	23	22	18	17	14	9	5	4	5

5b

Unit 0.01

HOURLY VALUES OF h'F OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Day \ 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
1	340	b	a	b	b	b	b	240	b	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
2	o	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	250	b	300	280	310	o	a
3	a	340	a	a	b	b	b	b	b	b	b	210	b	b	b	b	270	260	250	250	a	a	a	a
4	a	a	300	330	300	b	b	240	230	240	b	b	b	b	b	230	200	b	1	260	260	260	330	a
5	a	340	340	a	b	b	250	b	b	230	b	b	b	b	200	230	230	a	b	a	a	a	250	290
6	310	320	300	300	280	250	230	e250b	b	230	b	b	b	b	b	b	b	220	b	300	270	320	b	a
7	300	a	b	b	b	b	250	240	230	220	230	o	230	200	210	230	230	230	b	250	a	250	250	300
8	a	300	280	260	280	250	240	220	240	a	a	a	230	220	o	o	230	a	a	250	250	260	250	300
9	a	e340a	290	280	310	250	250	230	220	210	220	220	b	b	b	280	o	o	o	o	o	o	o	o
10	o	o	o	o	o	o	o	o	o	o	o	o	o	b	220	240	240	240	250	260	250	250	250	a
11	290	290	260	260	270	a	250	b	b	b	b	b	b	o	b	240	230	250	e250b	270	240	300	a	a
12	b	b	a	a	320	b	e280be250b		o	o	o	b	b	b	b	b	b	b	b	b	b	b	a	b
13	a	b	a	b	330	310	270	250	e250b	230	b	220	b	b	b	b	b	b	b	300	270	360	b	b
14	b	b	b	b	280	270	o	o	o	o	o	a	a	b	b	230	250	b	250	270	260	260	290	a
15	300	300	280	280	290	270	260	270	250	250	a	b	b	b	b	b	a	250	250	250	250	280	290	300
16	300	300	310	320	270	260	260	240	240	b	260	b	b	b	b	b	b	b	b	260	270	b	b	a
17	a	a	b	b	a	b	b	b	b	o	o	b	b	b	b	g	b	b	o	280	a	a	a	b
18	330	330	310	300	280	270	250	a	240	230	230	230	e230a	e270b	b	230	250	270	280	270	b	b	b	b
19	330	300	290	310	a	220	250	250	240	230	260	b	e250a	e220a	e240a	230	o	o	o	o	o	b	a	b
20	a	a	a	350	300	270	270	270	270	a	a	e240a	230	b	a	a	a	a	260	280	270	a	o	o
21	o	o	o	b	300	270	280	260	250	230	b	b	b	b	b	b	a	250	260	270	250	250	270	280
22	300	300	310	a	330	280	260	250	240	220	b	b	b	b	b	240	240	260	280	a	a	260	330	a
23	a	a	380	350	320	300	280	270	b	b	250	b	b	b	260	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e290b	b	b	b
25	o	o	o	o	o	o	o	o	o	o	o	o	b	b	b	b	b	b	b	b	b	b	a	a
26	a	b	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	a	b	b
27	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	o	o	o	o	o	o	o
28	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	b	b	270	e300b	e350b	310	a	a	a
29	a	a	a	o	o	o	o	o	o	o	o	o	b	o	o	o	a	a	a	a	a	a	a	a
30																								
31																								
Median	u300	300	300	300	300	270	250	250	240	230	240	u220	u230	-	u215	230	235	250	u250	270	260	260	u270	u300
No.	9	10	12	11	15	13	15	13	11	11	6	5	5	4	5	11	10	11	9	16	13	12	9	5

6a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING FEBRUARY, 1956 AT MACQUARIE ISLAND.

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Day \ 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
1	f	f	a	b	b	b	b	g	b	o	o	o	o	o	o	o	o	o	o	o	o	o	o	a
2	o	b	b	b	b	b	b	b	g	g	g	g	g	g	g	g	350	380	370	380	350	f	o	a
3	a	390	a	a	b	b	b	b	b	b	b	g	b	g	g	g	400	320	320	320	a	a	a	a
4	a	380	340	370	350	b	b	340	300	340	340	330	340	330	340	350	330	350	330	a	300	300	360	a
5	a	370	380	a	b	b	300	290	340	g	g	330	310	a	350	350	330	320	a	330	a	a	a	350
6	400	350	f	350	300	300	290	g	b	300	340	320	330	330	350	320	320	320	320	290	310	370	b	a
7	a	a	b	b	b	b	280	290	320	330	300	o	330	310	330	330	320	320	320	300	a	340	a	a
8	a	370	350	340	330	300	280	280	300	320	320	310	320	330	o	340	340	330	340	300	300	320	330	360
9	a	a	330	350	360	300	280	290	280	320	320	340	330	320	350	330	320	o	o	o	o	o.	o	o
10	o	o	o	o	o	o	o	o	o	o	o	o	o	330	330	330	320	320	330	a	a	330	a	a
11	f	330	f	330	310	a	300	300	b	300	320	330	320	o	350	330	330	320	330	330	a	f	a	a
12	b	b	a	a	370	b	330	g	o	o	o	350	330	b	400	420	b	b	a	b	a	b	a	b
13	a	b	a	b	370	350	340	360	g	g	g	g	g	g	g	g	g	360	390	f	f	f	b	b
14	b	b	b	b	350	300	o	o	o	o	o	370	g	350	360	380	350	320	330	320	330	350	a	a
15	350	380	330	350	350	310	290	310	280	360	340	g	g	350	350	350	a	350	330	330	a	340	350	a
16	340	400	380	f	340	300	a	g	320	280	320	370	360	370	380	440	o	320	330	380	3 20	a	a	a
17	a	a	b	b	a	b	b	b	b	o	o	g	g	g	g	g	430	360	o	350	a	a	a	b
18	f	400	400	380	360	300	310	350	350	400	g	g	g	g	390	370	360	a	a	a	b	b	b	b
19	a	a	a	400	a	a	a	300	340	340	400	g	g	390	400	380	o	o	o	o	o	b	a	b
20	a	a	a	a	350	330	340	340	320	370	380	380	400	400	390	400	380	370	340	370	350	a	o	o
21	o	o	o	b	a	330	330	320	350	330	350	350	370	380	400	360	350	a	a	o	320	a	350	380
22	a	370	380	a	400	a	320	320	330	350	340	420	380	380	460	370	380	a	340	a	a	a	a	a
23	a	a	a	400	400	350	350	350	370	380	g	g	265	g	g	b	b	b	b	b	b	b	b	b
24	370	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	o	a	430	450
25	o	o	o	o	o	o	o	o	o	o	o	o	b	b	b	b	b	b	b	b	b	b	a	a
26	a	b	a	a	b	b	b	b	b	b	b	b	b	b	b	400	360	320	350	a	a	a	b	b
27	b	b	b	b	400	b	b	b	g	340	370	360	410	360	b	o	310	o	o	o	o	o	o	o
28	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	370	360	300	340	370	350	a	a	a
29	a	a	a	o	o	o	o	o	o	o	o	o	b	o	o	o	350	350	350	a	a	a	a	a
30																								
31																								
Median	-	375	u365	u350	350	300	305	315	320	340	340	350	330	350	355	360	350	320	330	330	u320	u340	u350	-
No.	4	10	8	9	15	11	14	14	13	15	13	13	14	14	16	19	20	18	17	13	9	7	5	4

6b

Unit 1 km

HOURLY VALUES OF $f^{o}F1$ OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								41	b	c	c	c	c	c	c	c	c	c	c	c				
2									b	b	45	46	47	47	46	45	b	43	b	31				
3						b	b	b	b	b	b	47	b	48	46	46	45	1	1					
4						b	b	1	1	47	48	u48?	49	48	49	48	44	b	1					
5							1	1	b	48	47	48	49	48	47	48	44	1	b	a	a			
6								1	b	48	49	49	49	b	49	44	44	43	1					
7								1	1	47	47	c	47	46	47	47	45	1	b					
8									42	46	c	48	49	49	c	c	46	1	1					
9								1	46	49	1	48	48	49	49	48	1	c						
10							c	c	c	c	c	c	c	49	48	48	46	1	1					
11								b	b	1	49	51	49	c	51	47	47	1						
12								34	c	c	c	49	48	b	48	b	b	b	b	b					
13								1	44	47	46	47	49	47	48	47	45	b	38	1				
14							c	c	c	c	c	50	50	51	49	49	1	b						
15								1	1	49	48	1	50	50	49	49	a	45						
16								49	48	47	1	1	52	1	51	49	46	b	b					
17									b	c	c	49	49	49	49	48	49	b	c					
18							1	1	49	53	52	54	53	53	52	1	1							
19								1	47	49	54	54	54	55	56	50	c	c	c	c	c			
20								1	48	50	53	54	53	52	50	1	47	a						
21							1	42	48	49	48	52	1	55	54	52	a	1						
22									471	51	501	52	53	50	53	1	1	1						
23								1	1	48	49	51	51	51	50	b	b	b	b	b				
24							b	b	b	b	b	b	b	b	b	b	b	b	b					
25							c	c	c	c	c	c	b	b	b	b	b	b						
26							b	b	b	b	b	b	b	b	b	49	49	b	1					
27									b	b	51	49	51	b	b	b	b	c	c					
28							c	c	c	c	c	c	c	c	c	b	b							
29							c	c	c	c	c	c	b	c	c	c	a	a	a					
30																								
31																								
Median								-	47	48	49	49	49	49	49	48	46	-	-	-				
No.								4	9	15	15	19	20	18	21	17	13	3	1	1				

7a

Unit 0.1 Mc.

HOURLY VALUES OF foE OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0–13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								b	b	c	c	c	c	c	c	c	c	c	c	c				
2									b	b	b	b	b	b	b	b	b	b	b	195				
3						b	b	b	b	b	b	b	b	b	b	b	b	b	b	a				
4						b	b	b	b	a	b	b	b	b	b	b	b	b	a	a	170			
5							b	b	b	b	b	b	b	b	b	b	a	a	b	a				
6								b	b	b	b	b	b	b	b	b	b	200	b	b				
7								a	a	a	a	c	a	a	a	a	a	a	b	a				
8									a	a	a	b	b	b	c	c	a	a	a					
9						180	225	c	a	a	a	a	b	b	b	b	b	c						
10						c	c	c	c	c	c	c	c	b	b	b	a	a	a	185				
11						180	b	b	b	b	b	b	b	c	b	b	b	b	b					
12								b	c	c	c	b	b	b	b	b	b	b	b	b				
13						180	230	195	b	b	b	b	b	b	b	b	b	b	b	190				
14						185	c	c	c	c	c	a	a	b	b	a	b	b	a	a				
15						170	b	a	b	b	a	b	b	b	b	b	b	b	c					
16						f	235	295	320	b	b	b	b	b	b	b	b	b	b	b				
17									b	c	c	b	b	b	b	b	b	b	c	195				
18							215	205	a	a	b	b	b	b	b	b	u340p	290p	u230p					
19						e170b	220	u270p	b	340	u380p	b	b	a	a	335	c	c	c	c				
20						175	235	295	320	a	a	a	380	b	a	a	a	a	u230p	195				
21							u230p	a	a	a	b	b	b	b	b	b	a	u295p	a	180				
22						170	215	b	325	u335p	b	b	a	b	b	b	e320a	220	a	a				
23							c	b	b	b	b	b	b	b	b	b	b	b	b	b				
24								b	b	b	b	b	b	b	b	b	b	b	b	b				
25								c	c	c	c	c	b	b	b	b	b	b	b	b				
26								b	b	b	b	b	b	b	b	b	b	b	b	b				
27									b	b	b	b	b	b	b	b	b	c	c	c				
28							c	c	c	c	c	c	c	c	c	b	b	b						
29							c	c	c	c	c	c	b	c	c	c	a	a	a					
30																								
31																								
Median						180	230	270	-	-	-	-	-	-	-	-	-	-	-	190	-			
No.						8	8	5	3	2	1	0	1	0	0	1	2	4	2	6	1			

7b

Unit 0.01 Mc.

HOURLY VALUES OF fs OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	b	38	b	b	b	b	b	b	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
2	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	g	e	d21a	a	49
3	49	24	d21a	41	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	25	24	59	31	59
4	49	d21a	e	e	e	b	b	b	b	34	b	b	b	b	b	b	b	b	d21a	28	d21a	32	d21a	47
5	49	d21a	d21a	32	b	b	b	b	b	b	b	b	b	b	b	b	d21a	28	b	76	77	69	47	48
6	46	d21a	e	e	e	e	21	b	b	b	b	b	b	b	b	b	b	d21a	b	25	e	e	b	48
7	e	56	b	b	b	b	23	27	36	d21a	34	a	34	32	33	32	39	d21a	b	34	59	54	e	53
8	d48s	d48s	36	d48s	36	23	25	50	53	54	50	46	39	39	a	a	33	52	32	33	29	58	39	36
9	d47s	d48s	32	e	e	37	25	31	33	37	32	34	b	b	b	b	b	a	a	a	a	a	a	a
10	a	a	a	a	a	a	a	a	a	a	a	a	a	b	b	b	32	26	26	g	e	e	e	d77a
11	30	e	e	e	e	g	b	b	b	b	b	b	b	a	b	b	b	b	b	59	e	e	d49s	d49s
12	b	b	d49s	59	32	b	b	b	a	a	a	b	b	b	b	b	b	b	54	b	74	b	69	b
13	59	b	d49s	b	e	g	g	d21a	b	b	b	b	b	b	b	b	b	b	b	e	e	e	b	b
14	b	b	b	b	e	g	a	a	a	a	a	35	34	b	b	34	b	b	48	46	d21a	e	e	30
15	e	d21a	e	e	34	g	20	d21a	b	b	48	b	b	b	b	b	d77a	26	d21a	28	a	e	e	e
16	37	e	e	e	e	e	23	g	g	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d49s
17	64	59	b	b	64	b	b	b	b	a	a	b	b	b	b	b	b	b	a	g	s	s	s	b
18	s	e	a	e	e	e	24	24	49	37	37	37	b	b	b	b	g	g	b	b	e	b	b	b
19	e	d21a	e	e	s	e	g	g	b	g	g	d21a	37	36	35	58	a	a	a	a	a	b	58	b
20	53	59	59	49	e	19	28	g	g	54	a	37	g	b	59	75	60	d77a	d21a	26	e	s	a	a
21	a	a	a	b	d21a	e	d21a	60	36	31	b	b	b	b	b	b	59	g	49	e	a	e	a	e
22	35	e	e	d21a	d21a	e	g	g	32	35	b	b	49	b	b	26	32	35	56	d77a	d77a	d21a	d21a	s
23	d32s	58	d21a	e	e	19	g	d21a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
25	a	a	a	a	a	a	a	a	a	a	a	a	b	b	b	b	b	b	b	b	b	b	72	59
26	74	b	74	74	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d77a	73	b	b
27	b	b	b	b	e	b	b	b	b	b	b	b	b	b	b	b	b	a	a	a	a	a	a	a
28	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	b	b	b	b	b	b	69	57	d59s
29	49	a	54	a	a	a	a	a	a	a	a	a	b	a	a	a	59	57	59	d77	56	49	b	59
30																								
31																								
Median	48	d 21	d 21				22	d 21	34	37	36	37	36			34	49	28	49	28	24	32	39	48
No.	16	16	19	16	17	14	12	12	8	8	6	5	6	3	3	5	8	9	7	17	16	15	13	14

8a

Unit 0.1 Mc

HOURLY VALUES OF h'F2 OBSERVED DURING FEBRUARY 1956 AT MACQUARIE ISLAND.

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								390	b	a	a	a	a	a	a	a	a	a	a	a				
2									380	410	340	440	410	460	510	430	350	370	370	380				
3							b	b	b	b	b	420	b	440	390	430	390	1	1					
4							b	b	1	1	340	340	330	330	320	340	340	310	310	290				
5								250	1	340	330	310	320	310	350	350	330	310	290	300	270	a	300	
6									1	b	300	340	320	330	330	350	310	310	300	300	260			
7									290	1	330	280	a	320	300	300	300	300	270	260				
8										280	320	320	310	310	320	a	a	320	300	280				
9									1	280	1	1	330	320	310	340	300	300	a					
10								a	a	a	a	a	a	a	320	320	320	310	290	280				
11											280	320	320	310	a	350	310	300	280					
12									400	a	a	a	340	330	b	380	420	b	b	a	b			
13									1	400	440	550	560	440	470	470	430	410	360	390	350			
14								a	a	a	a	a	a	370	380	350	360	370	1	300				
15									310	1	300	330	1	370	350	350	330	a	330					
16									g	310	270	310	1	350	1	380	400	370	290	b				
17										b	a	a	500	500	500	500	450	430	340	a				
18								1	a	350	380	400	430	370	400	390	350	1						
19									1	1	340	400	370	420	390	400	370	a	a	a	a	a	b	
20									330	320	350	380	370	400	400	370	1	370	a					
21								310	310	1	320	280	340	1	1	380	350	a	1					
22										1	350	330	1	380	380	460	1	1	1					
23									1	370	380	430	490	470	460	440	b	b	b	b	b	b		
24								b	b	b	b	b	b	b	b	b	b	b	b					
25								a	a	a	a	a	a	b	b	b	b	b	b	b	b	b	b	
26								b	b	b	b	b	b	b	b	b	400	360	350	1				
27										370	b	370	360	410	350	b	330	280						
28								a	a	a	a	a	a	a	a	a	360	340						
29								a	a	a	a	a	a	b	a	a	a	350	a					
30																								
31																								
Median								-	u330	345	335	340	365	370	350	380	350	330	300	295	-	-	-	
No.								2	7	10	16	17	18	20	19	21	21	18	14	8	4	0	1	

8b

Unit 1 Km

HOURLY VALUES OF foF2 OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Day \ 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
1	a	a	b	b	c	c	c	c	c	c	c	c	c	63	66	72	75	74	58	u 54s	b	b	b	a
2	a	36f	31f	28f	26f	b	b	b	b	b	72	64	66	73	77	78	71	55	b	b	49f	49f	b	b
3	a	42f	a	33f	b	b	b	b	b	55	57	56	59	61	65	b	b	a	a	a	b	a	a	b
4	a	a	b	b	a	b	b	b	b	b	b	s	b	c	c	c	c	c	c	c	c	c	c	c
5	c	b	b	a	29f	30	d 43s	53	s	s	68	77	76	80	80	79	80	d 66s	d 66s	d 69s	d 72s	49f	45f	a
6	a	a	a	a	a	b	b	45	48	54	56	59	58	59	62	67	71	u 70f	60	56f	u 53f	a	a	a
7	a	a	a	39	33	33f	b	b	54	56	58	59	61	61	59	61	63	63	66	69	66	58f	a	s
8	s	s	45	42	41f	39f	55	c	68	69	u 72s	d 69s	d 66s	77	76	77	77	77	d 77c	u 78s	d 69s	d 57s	d 49s	u 53s
9	49f	45	46	41	35	37	d 49s	d 64s	d 66s	d 66s	d 77c	d 77c	u 78s	80	d 74s	d 77c	u 79s	d 70s	d 70s	u 81c	d 69s	d 59s	d 59s	d 54s
10	d 49s	d 46s	d 47s	47f	40f	39f	d 48s	d 66s	d 74s	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 69s	d 65s	d 74s	u 61s	d 50s	a	d 49s
11	45f	31	28f	27f	31	41f	48	b	b	b	b	68	d 77c	d77c	d 77c	c	c	c	c	c	a	a	a	a
12	33f	32f	26f	22f	21f	29	u 50s	u 72s	78	d 72c	d 77c	d 77c	d 77c	d 77c	b	s	d 77c	d 77c	d 77c	d 77c	d 49s	u 46s	51	43f
13	a	36f	38f	35f	31f	36f	45	54	60	69	75	76	u 82c	c	d 77c	d 77c	d 77c	d 77c	d 69s	b	b	a	a	51
14	d 54s	48f	a	44f	45f	42f	49	61	72	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	b	a	d 47s	d 44s
15	b	b	b	a	d 53s	d 49s	u 56s	68	d 77c	d 77c	d 77c	d 77c	d 77c	c	b	b	b	b	d 69s	d 63s	a	b	b	a
16	b	b	49	c	b	b	48	61	65	d 77c	71	u 78c	d 77c	78	d 77c	c	c	c	c	c	c	c	c	c
17	c	c	c	c	c	c	c	c	c	c	c	c	c	d 77c	d 77c	d 77c	c	c	c	d 77c	d 57s	d 57s	s	s
18	s	u 48f	s	u 51s	s	s	s	d 54s	76	78	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 64s	d 59s	58	56f
19	d 49s	52f	s	b	48	44f	51	d 61r	72	78	d 77c	d 77c	d 77c	c	d 77c	d 77c	d 77c	d 77c	d 69s	d 77c	d 69s	c	u 47f	a
20	d 49s	a	a	59f	u 56f	d 55s	62	d 69s	79	b	d 77c	d 77c	d77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 59s	d 60s	d 56s	d 45s
21	d 44s	d 45s	44f	42f	37	35	48	d 63s	u 73s	77	u 81c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 58s	d 57s	a	d 59s	b	b
22	b	b	b	b	b	b	b	w	b	b	w	u 64s	f	d 77c	51	w	48	w	f	b	a	b	b	b
23	b	b	a	b	b	b	b	b	b	b	b	56	u 66f	69	58	b	b	b	b	b	b	b	b	a
24	37	32	32f	29f	29	30f	d 54s	d 69s	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 65s	a	b	b
25	56f	a	b	b	b	b	43f	49	b	57	61	64	71	76	76f	c	c	c	c	c	52f	b	a	51f
26	46f	a	f	34f	b	b	b	52	61	b	b	b	b	d 77c	d 77c	b	d 77c	d 77c	d 77c	d 55s	b	d 59f	a	b
27	b	b	b	b	f	u 31f	36	b	53	58	62	u 63j	74	78	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	52f	b	b	b
28	b	a	a	a	b	b	b	d 55s	57	c	b	c	b	c	b	b	c	d 59s	a	49f	a	b	a	b
29	b	b	b	a	b	b	b	b	b	b	b	62	72	d 77c	77	72f	c	d 77c	a	a	a	u 45f	b	b
30	b	b	a	a	b	b	b	53	68	b	80	d 77c	d 77c	d 77c	d 77c	d 77c	b	b	d 77c	d 59s	f	48f	f	f
31	c	c	c	c	33f	b	b	u 47c	b	b	59	f	f	f	f	f	d 69s	c	53f	b	b	b	b	a
Median	d 48 e 57	44	41	39	34	37f	49	61	70	77	d 77	d 77	d 77c	d 77	d 77	d 77	d 77	d 77	d 70	d 76	64	58	d 50	d 50
No.	11	12	10	15	16	15	13	17	18	15	22	25	24	25	26	19	20	20	20	20	10	11	8	9

9a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Day \ 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
1	a	a	b	b	c	c	c	c	c	c	c	c	c	285	270	280	290	275	260	u265s	b	b	b	a
2	a	u225f	240f	235f	260f	b	b	b	b	b	290	275	265	280	265	270	275	270	b	b	u255f	u255f	b	b
3	a	u245f	a	u250f	b	b	b	b	b	270	285	255	255	250	250	b	b	a	a	b	a	a	b	b
4	a	a	b	b	a	b	b	b	b	b	b	s	b	c	c	c	c	c	c	c	c	c	c	c
5	c	b	b	a	u250f	275	s	300	s	s	300	300	300	295	300	305	290	s	s	s	s	f	u250f	a
6	a	s	a	a	a	b	b	295	265	265	265	275	255	265	270	260	265	f	270	f	f	a	a	a
7	a	a	a	250	250	270f	b	b	290	285	275	270	275	285	275	285	280	285	290	285	280	f	a	s
8	s	s	255	280	265f	285f	300	c	300	310	u310s	s	s	285	295	285	295	295	c	c	u295s	s	s	s
9	u260f	285	275	270	290	285	s	s	s	s	c	c	u310s	295	s	c	u300s	s	s	u300c	s	s	s	s
10	s	s	s	275f	280f	285f	s	s	s	c	c	c	c	c	c	c	c	s	s	s	u285s	s	a	a
11	u250f	250	250f	250f	250	260f	295	b	b	b	b	250	c	c	c	c	c	c	c	c	a	a	a	a
12	u240f	285f	u230f	235f	260f	260	300s	u315s	265	c	c	c	c	c	b	s	c	c	c	c	s	u250s	255	u245f
13	a	u240f	u250f	235f	245f	u235f	285	295	285	300	285	280	u290c	c	c	c	c	c	s	b	b	a	a	245
14	s	u240	a	u250f	u250f	u260f	285	295	310	c	c	c	c	c	c	c	c	c	c	c	b	a	s	s
15	b	b	b	a	s	s	u285s	295	c	c	c	c	c	c	b	b	b	b	s	s	a	b	b	a
16	b	b	255	c	b	b	285	295	305	c	285	u285c	c	290	c	c	c	c	c	c	c	c	c	c
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	s	s	s	s
18	s	u240f	s	f	s	s	s	s	310	315	c	c	c	c	c	c	c	c	c	c	s	s	255	255f
19	s	265f	s	b	250	260f	290	r	305	300	c	c	c	c	c	c	c	c	s	c	s	c	u250f	a
20	s	a	a	f	f	s	290	s	305	b	c	c	c	c	c	c	c	c	c	c	s	s	s	s
21	s	s	u255f	245f	255	260	290	s	285	290	305c	c	c	c	c	c	c	c	s	s	a	s	b	b
22	b	b	b	b	b	b	b	w	b	b	w	u240s	f	c	230	w	220	w	f	b	a	b	b	b
23	b	b	a	b	b	b	b	b	b	b	b	235	f	255	250	b	b	b	b	b	b	b	b	a
24	235	245	250	250f	260	270	s	s	c	c	c	c	c	c	c	c	c	c	c	c	s	s	b	b
25	u240f	a	b	b	b	b	270f	280	b	255	250	260	255	275	260f	c	c	c	c	c	245f	b	a	235f
26	235f	a	f	250	b	b	b	290	290	b	b	b	b	c	c	b	c	c	c	s	b	f	a	b
27	b	b	b	b	f	f	275	b	275	275	285	u285j	280	285	c	c	c	c	c	c	265f	b	b	b
28	b	a	a	a	b	b	b	265	285	c	b	c	b	c	b	b	c	s	a	250f	a	b	a	b
29	b	b	b	a	b	b	b	b	b	b	b	255	240	c	300	u250f	c	c	a	a	a	f	b	b
30	b	b	a	a	b	b	b	305	300	b	325	c	c	c	c	c	b	b	c	s	f	255f	f	f
31	c	c	c	c	255f	b	b	u285c	b	b	250	f	f	f	f	f	s	c	u250f	b	b	b	b	a
Median	u240f	245f	u250f	250f	255	265f	290	295	290	290	285	270	270	285	270	u275	u285	u275	-	-	u270	-	-	-
No.	6	10	9	13	14	12	12	13	15	10	14	13	10	12	11	8	8	5	4	4	6	3	4	4

9b

Unit 0.01

HOURLY VALUES OF h'F OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	b	b	c	c	c	c	c	c	c	c	c	b	b	240	250	270	b	330	b	b	b	a
2	a	410	350	360	350	b	b	b	b	b	b	b	240	230	b	b	b	b	b	b	a	a	b	b
3	a	a	a	a	b	b	b	b	b	b	240	230	e250b	e250b	b	b	b	a	a	a	b	a	a	b
4	a	a	b	b	a	b	b	b	b	b	b	270	b	c	c	c	c	c	c	c	c	c	c	c
5	c	b	b	a	330	290	250	240	250	230	230	210	230	220	a	220	230	250	250	250	250	260	310	a
6	a	a	a	a	a	b	b	b	250	230	220	250	230	230	240	240	250	260	290	290	300	a	a	a
7	a	a	a	360	350	300	b	b	250	240	240	220	230	230	230	240	230	b	270	260	260	280	a	350
8	310	370	340	270	270	300	250	c	250	240	230	230	230	220	250	1	230	240	240	250	250	250	250	270
9	290	300	300	290	280	280	250	240	260	b	210	a	a	230	b	250	260	200	250	250	250	250	260	270
10	290	290	280	260	240	250	250	240	250	240	220	200	220	230	230	250	b	270	260	250	280	a	a	290
11	300	320	310	310	330	290	280	b	b	b	b	b	b	b	b	c	c	c	c	c	a	a	a	a
12	a	400	440	e400b	350	330	270	260	240	210	240	b	b	b	b	a	260	260	250	250	270	350	350	350
13	a	370	340	340	340	310	300	250	250	250	230	220	210	c	b	b	b	b	300	b	b	a	a	350
14	330	300	a	320	300	290	290	350	350	a	250	250	250	b	b	b	250	250	250	300	b	a	a	340
15	b	b	b	a	320	270	270	260	250	250	b	230	230	c	b	b	b	b	280	300	a	b	b	a
16	b	b	320	300	b	b	c	c	270	c	c	b	240	250	250	c	c	c	c	c	c	c	c	c
17	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	c	c	c	250	250	240	280	300
18	280	310	300	290	270	270	240	260	260	260	b	b	b	b	230	b	270	260	250	260	280	270	280	300
19	300	290	330	b	320	290	b	240	260	b	f	b	b	c	b	250	250	260	250	250	250	c	360	a
20	400	a	a	310	300	b	260	250	250	b	b	b	b	b	b	250	250	250	260	270	300	300	300	310
21	300	350	320	320	300	300	280	260	250	250	b	230	260	250	b	240	250	b	b	320	a	350	b	b
22	b	b	b	b	b	b	b	b	b	b	250	b	b	b	b	b	b	b	440	b	a	b	b	b
23	b	b	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a
24	230	360	350	340	300	290	250	240	250	240	240	b	250	230	220	e250b	250	250	250	250	270	a	b	b
25	a	a	b	b	b	b	350	e300b	b	b	b	b	b	b	b	c	c	c	c	c	350	b	a	380
26	350	a	340	350	b	b	b	300	270	b	b	b	b	b	280	b	280	260	260	350	b	390	a	b
27	b	b	b	b	400	370	320	b	260	e	b	b	b	b	290	250	270	290	260	250	290	b	b	b
28	b	a	a	a	b	b	b	310	330	c	b	250	b	250	b	b	c	310	a	360	a	b	a	b
29	b	b	b	a	b	b	b	b	b	b	b	b	b	b	b	b	c	b	a	a	a	a	b	b
30	b	b	a	a	b	b	b	280	250	b	250	230	250	230	b	270	b	b	250	250	280	300	260	230
31	c	c	c	c	340	b	b	300	b	b	b	b	260	250	250	270	270	c	350	b	b	b	b	a
Median	300	335	330	320	320	290	270	260	250	240	240	230	235	230	245	250	250	260	260	255	270	280	u280	305
No.	11	12	13	14	18	15	15	16	20	11	13	13	14	13	10	13	16	15	19	20	15	11	9	12

10a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	b	b	c	c	c	g	c	c	c	c	c	380	380	350	340	360	400	360	b	b	b	a
2	a	420	360	390	360	b	b	b	b	b	350	b	400	360	390	370	390	330	b	b	370	370	b	b
3	a	450	a	u380f	b	b	b	b	b	g	g	g	g	g	450	b	b	a	a	a	b	a	a	b
4	a	a	b	b	a	b	b	b	b	b	b	a	b	c	c	c	c	c	c	c	c	c	c	c
5	c	b	b	a	380	340	a	300	a	a	340	320	310	330	320	320	330	a	a	a	a	310	380	a
6	a	a	a	a	a	b	b	310	g	g	g	g	g	g	400	400	350	330	300	340	360	a	a	a
7	a	a	a	390	370	340	b	b	340	350	g	410	g	g	330	360	350	340	340	330	350	330	a	a
8	a	a	400	310	320	320	310	c	300	320	300	a	a	340	330	340	330	330	c	c	330	a	a	a
9	340	370	370	400	340	340	a	a	a	a	c	c	300	320	a	c	300	a	a	340	a	a	a	a
10	a	a	a	290	280	290	a	a	a	c	c	c	c	c	c	c	c	a	a	a	320	a	a	a
11	350	340	320	330	380	350	320	b	b	b	b	450	c	c	c	c	c	c	c	c	a	a	a	a
12	430	430	450	400	350	390	310	290	390	c	c	c	c	c	b	a	c	c	c	c	a	370	390	400
13	a	420	420	380	410	370	330	310	330	310	300	340	340	c	c	c	c	c	a	b	b	a	a	400
14	a	380	a	350	350	330	300	310	300	c	c	c	c	c	c	c	c	c	c	c	b	a	a	a
15	b	b	b	a	a	a	320	330	c	c	c	c	c	c	b	b	b	a	a	a	a	b	b	a
16	b	b	c	c	b	b	c	320	300	c	330	350	c	340	c	c	c	c	c	c	c	c	c	c
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a
18	a	370	a	370	a	a	a	a	290	300	c	c	c	c	c	c	c	c	c	c	a	a	330	350
19	a	330	a	b	370	350	310	r	290	300	c	c	c	c	c	c	c	c	a	c	a	c	400	a
20	a	a	a	370	330	a	300	a	300	b	c	c	c	c	c	c	c	c	c	c	a	a	a	a
21	a	a	380	400	400	390	340	a	310	330	300	c	c	c	c	c	c	c	a	a	a	a	b	b
22	b	b	b	b	b	b	b	w	b	b	w	g	f	c	490	w	g	w	f	b	a	b	b	b
23	b	b	a	b	b	b	b	b	b	b	b	g	430	440	g	b	b	b	b	b	b	b	b	a
24	430	420	400	390	400	350	a	a	c	c	c	c	c	c	c	c	c	c	c	c	a	a	b	b
25	380	a	b	b	b	b	370	350	b	410	g	420	400	370	370	c	c	c	c	c	400	b	a	440
26	390	a	f	380	b	b	b	340	340	b	b	b	b	c	c	b	c	c	c	a	b	f	a	b
27	b	b	b	b	f	380	350	b	350	370	360	350	350	340	c	c	c	c	c	c	350	b	b	b
28	b	a	a	a	b	b	b	340	340	c	b	c	b	c	b	b	c	a	a	370	a	b	a	b
29	b	b	b	a	b	b	b	b	b	b	b	g	420	c	310	380	c	c	a	a	a	u490f	b	b
30	b	b	a	a	b	b	b	300	300	b	290	c	c	c	c	c	b	b	c	a	f	350	f	f
31	c	c	c	c	350	b	b	340	b	b	g	f	f	f	f	f	a	c	370	b	b	b	b	f
Median	u385	400	u390	380	360	350	320	320	305	u325	u315	u350	u375	u340	375	u365	u340	u330	-	u340	u350	u360	-	-
No.	6	10	8	15	15	13	11	13	14	8	8	7	8	9	10	8	7	5	4	5	7	6	4	4

10b

Unit 1 km

HOURLY VALUES OF foF1 OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							c	c	c	c	c	c	c	48	47	46	45	1						
2											51	b	50	49	1	48	41p	b	b	b				
3							b	b	b	b	48	48	48	49	49	b	b	a	a					
4							b	b	b	b	b	44	b	c	c	c	c	c	c					
5									s	47	48	49	49	1	1	471	1							
6							b	1	42	46h	46	47	49	48	48	48	42	1						
7								b	42	431	471	48	47	47	48	42	421	1						
8										1	47	47	491	1	1	1	1	1						
9										b	1	u 47s	1	u 47s	b	1								
10											1	1	471	1	1	1	b							
11									b	b	b	47	49	47	48	c	c							
12														b	b	s								
13										1	1	55	1	c	b	1	b	b						
14																1								
15									1			1	1	c	b	b	b	b						
16										c		1	1	1	1									
17																								
18											1	1	1	1	1									
19											1				1									
20																								
21											b	1												
22								34			45	50	46	48	b	43	42	b						
23												47	47f	46	42	b								
24											1	1		1	1									
25											49	49	b	1	b	c	c							
26														1										
27										45		1	1	1	b	1								
28												44	b											
29												49	43	b	b		c	1						
30												1		1										
31											49	f	1	u 51f	f	421								
Median								-	-	-	48	48	48	48	48	46	42							
No.								1	2	4	9	14	11	10	6	7	5							

IPS Form 16

11a

Unit 0.1 Mc

HOURLY VALUES OF foE OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							c	c	c	c	c	c	c	b	b	b	b	b	b					
2							b	b	b	b	b	b	a	330p	b	b	b	b	b					
3							b	b	b	b	b	b	b	b	b	b	b	a	a					
4							b	b	b	b	b	b	b	c	c	c	c	c	c					
5							200	u245p	b	310	320	320	a	330	a	310	295	245	195					
6							b	b	b	315	a	a	325	a	330	b	b	b	205					
7							b	b	a	a	a	a	a	a	a									
8								c	a	b	b	b	b	b	b	b	u320r	290	b	u180a				
9							195	b	b	b	u380r	a	a	u360r	b	u325r	290	u255r	190					
10							195	a	a	a	335	r	u345r	r	u340r	b	b	b	u215c					
11							190	b	b	b	b	b	b	b	b	c	c	c	c					
12							185	b	a	310	a	b	b	b	b	s	b	b	b					
13							b	b	b	b	350	b	b	c	b	b	b	b	b					
14							f	c	u285a	a	b	b	b	b	b	b	b	b	b					
15								b	285	b	b	b	b	e	b	b	b	b	b	b				
16							c	170b	a	c	c	b	340	u355r	u240	c	c	c	c					
17							c	c	c	c	c	c	c	b	b	b	c	c	c					
18							170	b	b	b	b	b	b	b	b	b	b	b	b					
19								a	b	b	b	b	b	e	b	b	b	b						
20							e	u230c	b	b	b	b	b	b	b	b	b	b	a	a				
21								b	285	b	b	b	b	b	b	b	b	b	b					
22								b	b	b	b	b	b	b	b	b	b	b	b	b				
23												b	b	b	b	b	b	b	b	b				
24								a	b	b	b	b	b	b	b	b	b	b	185					
25							b	b	b	b	b	b	b	b	b	c	c	c	c	c				
26								b	b	b	b	b	b	b	b	b	b	b	b	b				
27									b	e	b	b	b	b	b	b	b	b						
28								b	b	c	b	b	b	u335b	b	b	c	a	a					
29							b	b	b	b	b	b	b	b	b	b	c	b						
30								b	b	b	b	b	b	b	b	b	b	b						
31								b	b	b	b	b	b	b	b	b	255							
Median							190	-	-	-	-	-	-	u335	-	-	-	-	195	-				
No.							7	3	3	3	4	1	3	5	3	2	4	3	5	1				

11b

Unit 0.01 Mc

HOURLY VALUES OF fEs OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	49	49	b	b	c	c	c	c	c	c	c	c	e	b	b	b	b	b	b	34	b	b	b	54
2	44	35	19	e	16	b	b	b	b	b	b	b	36	e	b	b	b	b	b	b	d 72s	37	b	b
3	42	45	59	43	b	b	b	b	b	b	b	b	b	b	b	b	b	37	59	d 77c	b	60	57	b
4	41	61	b	b	42	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c
5	c	b	b	39	d 21c	e	g	e	b	34	33	37	37	32	32	31	g	26	g	e	e	e	d 21c	51
6	44	47	44	53	44	b	b	b	b	31	34	32	35	32	g	b	b	b	g	d 21c	d 21c	33	48	74
7	70	62	51	63	37	d 21c	b	b	28	27	30	31	32	33	32	b	b	b	d 21c	e	e	49	30	b
8	29	33	29	37	e	b	b	c	d 21c	b	b	b	b	b	b	b	g	g	d 21c	g	e	e	e	e
9	e	e	e	e	e	e	g	b	b	b	g	35	34	34	b	g	g	g	g	e	e	e	e	e
10	e	e	e	d 21c	36	e	g	39	32	34	34	33	g	34	g	b	b	b	g	e	e	33	d 49s	d 21c
11	e	e	e	e	e	e	g	b	b	b	b	b	b	b	b	c	c	c	c	c	65	60	d 52s	59
12	36	d 21c	21	e	e	e	g	b	44	g	34	b	b	b	b	s	b	b	b	b	24	32	d 21c	d 21c
13	45	d 21c	42	e	d 21c	48	b	b	b	b	g	b	b	e	b	b	b	b	b	b	h	45	d 49s	31
14	e	42	46	d 21c	e	d 21c	e	g	31	32	b	b	b	b	b	b	b	b	b	b	b	d 49s	34	44
15	b	b	b	44	32	e	e	b	29	b	b	b	b	e	b	b	b	b	b	b	47	a	b	49
16	b	b	d 21c	e	b	b	e	d 21c	d 21c	d 21c	c	b	g	g	g	c	c	c	c	c	c	c	c	c
17	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	c	c	c	e	e	e	e	e
18	e	e	e	e	e	e	e	b	b	b	b	b	b	b	b	b	b	b	b	e	e	e	e	e
19	e	e	e	b	e	e	b	d 21c	b	b	b	b	b	c	b	b	b	b	e	e	e	c	d 21c	d 57s
20	d 21c	58	58	24	d 21c	b	d 21c	g	b	b	b	b	b	b	b	b	b	b	57	d 21c	b	d 21c	d 21c	b
21	e	b	e	e	e	e	e	b	b	b	b	b	b	b	b	b	b	b	63	e	71	d 21c	b	b
22	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d 77c	b	59	b	b	b
23	b	b	59f	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d 59s
24	d 21c	21	e	e	e	20	d 21c	d 21c	b	b	b	b	b	b	b	b	b	b	d 21c	d 21c	d 21c	d 59s	b	b
25	58	59	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	59	b	54	54f
26	d 21c	49	28	21c	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d 21c	48	b	53	d 59s	b
27	b	b	b	b	d 21c	d 21c	e	b	b	e	b	b	b	b	b	b	b	b	e	e	21	b	b	b
28	b	59	d 59s	d 70s	b	b	b	b	b	e	b	b	b	b	b	b	c	49	45	46	41	b	d 66s	b
29	b	b	b	58	b	b	b	b	b	b	b	b	b	b	b	b	c	b	d 71s	74	d 77c	d 77c	b	b
30	b	b	59	57	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e	e	d 21c	d 21c	e	d 21c
31	c	c	c	c	e	b	b	b	b	b	b	b	b	b	b	b	g	c	47	b	b	b	b	59
Median	36	44	28	22	16			d 21	31	32	33	33	34	32				26	45		22	37	48	51
No.	17	18	20	20	20	14	13	7	5	6	7	5	7	7	5	2	4	5	14	19	18	17	15	15

12a

Unit 0.1 Mc.

HOURLY VALUES OF h'F2 OBSERVED DURING MARCH 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									c	c	c	c	c	380	380	340	320	330						
2										1	350	b	400	350	1	350	370	320						
3										420	380	470	470	470	450	b								
4										b	b	s	b	c	c	c								
5										s	1	300	300	310	300	290	290							
6								300	390	420	420	400	470	420	400	400	330	300						
7									330	1	350	410	320	370	1	350	360							
8										310	300	300	1	1	300	300	300							
9										280	280	280	270	280	300	1								
10										1	270	290	300	270	300	300	280							
11										1	1	450	370	340	340	c								
12										1	1	1	1	260	s	s								
13										300	290	340	300	c	1	300	290	260						
14										1	1	1	1	1	1	270								
15										1	1	270	300	c	b	b								
16										c	1	1	1	1	1	1								
17										1	1	1	1	1	1	1								
18										1	290	1	280	290	300	1								
19										1	1	250	1	1	270	1								
20										1	1	1	1	1	1	1								
21										1	280	1	1	1	1	1								
22										b	550	480	480	410	b	500	530	490						
23										1	1	530	420	430	500	b								
24										1	280	290	1	260	250	1								
25										1	450	420	400	350	370	c								
26										1	1	1	1	290	1	1								
27										370	1	350	320	320	1	290								
28										1	1	1	1	1	1	1								
29										1	1	430	410	300	270	1	c	270						
30										1	1	1	1	260	250	1								
31										b	450	f	f	f	f	f								
Median								-	-	u340	325	350	345	320	300	300	u320	u310						
No.								1	2	6	14	17	16	19	15	11	9	6						

12b

Unit 1 km

HOURLY VALUES OF foF2 OBSERVED DURING APRIL, 1956. AT MACQUARIE ISLAND.

Sweep : 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	a	a	b	b	b	b	70	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	c	u 81c	f	u 60f	56f	56f	a	a	42f
2	40	u 34f	b	41	b	33f	39	53	62	62	68	67	72	74	77	78	c	c	c	c	c	c	c	f
3	b	a	a	a	a	b	b	47f	48	b	67	68	71	70	d 77c	b	b	50	a	a	a	a	b	a
4	b	45f	45	b	c	c	c	c	c	c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 59s	42f	d 67s	b	b	d 49s	a
5	b	a	a	a	31f	26f	b	48	58	66	70	74	74	u 82c	d 77c	d 77c	d 77c	58f	d 59s	d 49s	54f	50f	u 53f	d 49s
6	b	b	a	45f	45f	41f	b	b	61	67	71	71	c	71	73	d 71s	d 72s	d 77c	d 77c	b	b	a	a	a
7	a	a	b	a	s	s	b	54	67	77	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 59s	a	a	a	a	a
8	b	b	b	a	b	b	b	57	59f	77	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 59s	a	s	a	a	a
9	a	a	d 49s	s	41f	46f	40f	56	67	78	d 77c	d 77c	d 77c	s	c	c	c	c	f	49	53	52f	u 56f	53f
10	47	41f	43f	37	37	c	c	c	c	c	c	c	c	c	c	c	d 77c	d 77c	d 70s	69f	b	b	b	61f
11	a	u 62s	b	a	u 45f	u 42f	46f	56	66	69	c	c	c	c	77	73	u 79j	88	d 78s	u 75j	d 59s	57f	47	60
12	55f	54	b	b	a	b	b	58	68	76	83	83	85	90	96	d 85r	90	u 88r	d 73s	u 67f	u 57f	f	a	b
13	b	49f	f	u 54f	u 58f	u 68f	59f	59	72	82	87	d 93r	d100r	d 88r	d100	d 95r	d 88r	d 83r	d 74s	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	c	d100r	117	d116r	d 88s	d 88s	d 88s	d 88s	d 87s	82	d 69s	d 59s	d 59s
16	d 59s	u 58s	d 54s	56	51	u 49f	47f	61	88	d100r	119	d115r	d117r	d117r	d 98s	d105s	d114s	d 74s	d 59f	d 57f	d 57f	d 49f	39f	29f
17	f	a	a	u 55f	b	b	d 49s	u 56f	d 59s	68	75	78	79	d 88r	d 76s	u 78f	d 69s	48f	f	b	a	a	b	b
18	a	b	b	a	a	a	b	50	b	60	68	69	72	76	76	d 73s	48f	f	a	u 59s	b	b	a	a
19	38f	a	a	a	u 29f	28f	30	47	d 59s	72	78	83	98f	103	d105r	d 85c	58f	d 60f	56f	a	a	a	a	a
20	a	a	a	a	a	b	a	48	54	62	63	67	69	74	79	88	d 90s	87f	d 73s	67	57	u 51s	f	49
21	u 48f	a	38f	35	34f	32f	34	c	63	78f	87	d 95r	115	110	105	d 90s	d 85s	f	49f	c	c	c	c	c
22	c	a	46f	29f	39	b	b	b	b	a	w	c	c	c	c	c	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	118	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	f
25	59f	u 54f	f	u 47f	46f	41	39	52	74	86	d118r	116	d113s	118	119	118	120	d105s	d100s	d 90s	d 69s	f	u 58f	50f
26	56f	u 61f	56	57f	f	f	47	57	77	94	110	118	120	119	118	120	53f	u 57f	b	f	b	f	b	f
27	54	57f	51f	u 51f	49	46	b	b	b	b	63	f	b	b	b	b	b	a	a	a	a	b	b	a
28	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	57	b	f	44	a	a	a
29	a	a	31	28	u 26f	27	b	48	67	80	90	117	115	73	f	d 69s	58	a	a	a	42f	a	a	a
30	b	a	a	33	33	28f	24	40	60	69	81	89	103	100	f	53	60	a	a	a	a	a	a	a
31																								
Median	54f	54f	46	45f	40f	41f	40	54	66	76	78	83	92	90	d 77	d 77	d 77	d 77	d 65	u 67	57	u 52	u 54	u 52
No.	9	10	9	13	14	13	11	18	18	20	17	16	14	15	21	20	21	18	16	9	11	5	6	8

13a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING APRIL, 1956. AT MACQUARIE ISLAND.

Sweep : 1.0 - 16.0 Mc/s in 1m 55s. 157.5 E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	a	a	b	b	b	b	300	c	c	c	c	c	c	c	u290c	f	f	f	u255f	a	a	245f
2	245	f	b	235	b	u250f	280	290	305	280	275	280	270	280	280	290	c	c	c	c	c	c	c	f
3	b	a	a	e	a	b	b	285f	245	b	265	255	275	255	c	b	b	260	a	a	a	a	b	a
4	b	f	245	b	c	c	c	c	c	c	c	c	c	c	c	c	c	s	f	s	b	b	s	a
5	b	a	a	a	f	255	b	295	295	300	305	300	300	u285c	c	c	c	u280f	s	s	265	260	u250s	a
6	b	b	a	f	260f	u250f	b	b	285	300	290	285	c	280	290	s	s	c	c	b	b	a	a	a
7	e	a	b	a	s	s	b	290	300	300	c	c	c	c	c	c	c	c	s	a	a	a	a	a
8	b	b	b	a	b	b	b	285	300f	310	c	c	c	c	c	c	c	c	s	a	a	a	a	a
9	a	a	s	s	265f	245f	260	300	330	305	c	c	c	s	c	c	c	c	f	285	265	245f	f	260f
10	255	235f	235f	260	255	c	c	c	c	c	c	c	c	c	c	c	c	c	c	255	b	b	b	f
11	a	u260s	b	a	f	f	260f	305	295	295	c	c	c	c	285	285	u285j	270	s	280	s	f	255	250
12	245f	245	b	b	a	b	b	300	300	300	285	285	275	270	270	r	290	u290r	s	f	f	f	a	b
13	b	f	f	f	f	f	280f	295	300	295	300	r	r	r	r	r	r	r	s	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	c	r	300	r	s	s	s	s	s	280	s	s	s
16	s	s	s	265	275	f	270f	285	310	r	300	r	r	r	s	s	s	s	f	f	f	f	f	u230f
17	f	a	a	f	b	b	s	f	s	275	255	260	235	r	s	f	s	u255f	f	b	a	a	b	b
18	a	b	b	a	a	a	b	280	b	280	280	275	275	285	275	s	270f	f	a	u285s	b	b	a	a
19	u230f	a	a	a	f	255f	260	285	s	300	285	285	280f	275	r	c	260f	d	f	a	a	a	a	a
20	a	a	a	a	a	b	a	285	285	285	280	270	270	275	275	270	s	270f	s	265	250	u255s	f	245
21	u245f	a	245f	250	245f	255f	260	c	300	290	280	r	270	260	270	s	s	f	250	c	c	c	c	c
22	c	a	240	235f	235	b	b	b	b	a	w	c	c	n	c	c	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	290	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	f
25	240f	u255f	f	u275f	270f	285	285	315	320	310	r	300	s	300	300	300	290	s	s	s	s	f	f	f
26	235	f	235	f	f	f	270	300	315	300	300	300	350	300	300	300	280f	f	b	f	b	f	b	f
27	f	230f	240f	f	240	260	b	b	b	b	280	f	b	b	b	b	b	a	a	a	a	b	b	a
28	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	240	b	f	245	a	a	a
29	a	a	250	270	u270f	280	b	280	300	285	270	300	260	265	f	s	265	a	a	a	240	a	a	b
30	b	a	a	255	265	260f	270	270	290	300	290	300	305	280	f	280	245	a	a	a	a	a	a	a
31																								
Median	u245f	u245f	u240	u260	260	255f	270	290	300	300	285	285	275	280	280	u290	u280	u270	-	u280	u255	-	-	u245f
No.	7	5	7	8	10	10	10	17	18	18	17	13	12	14	10	6	9	7	1	5	7	3	2	5

13b

Unit 1 km

HOURLY VALUES OF h'F OBSERVED DURING APRIL, 1956 AT MACQUARIE ISLAND.

Sweep: 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	a	a	b	b	b	b	270	250	250	240	250	250	240	c	260	330	a	a	a	a	a	330
2	340	350	b	b	b	350	300	260	250	240	240	250	1	240	240	250	c	c	c	c	c	c	c	a
3	b	a	a	a	a	b	b	300	b	b	b	b	b	b	b	b	b	350	a	a	a	a	b	a
4	b	380	a	b	c	c	c	c	c	c	240	230	230	240	240	250	250	270	280	300	b	b	b	a
5	b	a	a	a	a	330	b	270	250	240	240	240	240	1	250	250	250	290	300	310	290	310	a	340
6	b	b	a	340	300	290	b	b	270	250	250	230	c	250	240	240	250	250	260	b	b	a	a	a
7	a	a	b	a	c	280	b	c	270	250	240	250	260	250	250	250	260	250	280	a	a	a	a	a
8	b	b	b	a	b	b	b	260	230	260	280	250	250	250	250	250	230	240	260	a	c	a	a	a
9	a	a	a	b	280	280	280	260	250	200	240	250	270	s	c	c	c	c	300	250	a	340	290	300
10	310	340	300	300	290	c	c	c	c	c	c	c	c	c	c	c	250	280	a	b	b	b	b	a
11	a	a	b	a	350	300	300	250	250	b	c	c	c	c	b	b	260	260	250	250	270	290	a	a
12	360	400	b	b	a	h	b	280	280	250	b	250	250	b	b	260	250	260	310	300	340	360	a	b
13	b	b	300	a	280	290	250	250	250	260	260	b	b	b	260	250	260	250	270	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	c	250	230	230	250	250	240	220	240	250	250	270	260
16	280	280	280	270	280	300	280	280	240	240	240	240	230	240	240	250	260	280	250	240	250	280	280	340
17	340	a	a	a	b	b	310	b	b	260	270	280	270	270	b	b	260	350	a	b	a	a	b	b
18	a	b	b	a	a	a	b	300	b	b	b	b	b	b	240	250	300	a	a	b	b	b	a	a
19	a	a	a	a	360	330	310	280	260	250	250	280	260	250	260	300	b	330	a	a	a	a	a	a
20	a	a	a	a	a	b	a	290	270	250	250	250	b	b	b	310	290	b	320	b	300	360	360	340
21	a	a	a	340	330	320	300	c	280	260	270	280	270	280	290	260	270	260	300	c	c	c	c	c
22	c	a	380	400	370	b	b	b	b	a	w	w	280	c	c	c	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	250	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	320
25	290	290	290	270	280	270	260	250	240	240	250	240	240	240	240	240	240	230	240	230	250	250	250	290
26	a	330	350	320	330	280	260	250	240	240	240	240	240	250	250	250	260	a	b	400	b	b	b	b
27	400	370	350	350	300	300	b	b	b	b	320	b	b	b	b	b	b	a	a	a	a	b	b	a
28	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	a	a	a	a
29	a	a	a	a	b	270	b	300	250	240	1	280	b	b	250	290	b	a	a	a	350	a	a	b
30	b	a	a	350	300	320	300	290	290	250	250	250	250	260	b	b	a	a	a	a	a	a	a	a
31																								
Median	u340	u345	u300	u340	300	300	300	275	250	250	250	250	250	250	250	250	255	260	275	u250	u280	u300	u280	u325
No.	7	8	7	9	13	15	11	16	18	18	19	19	16	14	17	17	18	17	14	9	8	8	5	8

14a

Unit 1 km.

HOURLY VALUES OF hpF2 OBSERVED DURING APRIL, 1956. AT MACQUARIE ISLAND.

Sweep: 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	a	a	b	b	b	b	300	c	c	c	c	c	c	c	300	f	380	350	340	a	a	380
2	370	u380f	b	460	b	380	330	300	320	340	370	360	360	350	340	320	c	c	c	c	c	c	c	f
3	b	a	a	a	a	b	b	310	b	b	380	380	350	360	c	b	b	380	a	a	a	a	b	a
4	b	400	a	b	c	c	c	c	c	c	c	c	c	c	c	c	c	s	320	s	b	b	s	a
5	b	a	a	a	a	350	b	310	310	320	310	330	310	330	c	c	c	290	s	s	380	360	410	s
6	b	b	a	350	310	340	b	b	320	300	320	330	c	350	320	s	s	c	c	b	b	a	a	a
7	a	a	b	a	s	s	b	320	300	300	c	c	c	c	c	c	c	c	s	a	a	a	a	a
8	b	b	b	a	b	b	b	310	290	300	c	c	c	c	c	c	c	c	s	a	s	a	a	a
9	a	a	s	s	340	330	330	300	280	300	c	c	c	s	c	c	c	c	f	290	360	390	u340f	350
10	350	390	350	350	370	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	b	b	b	380
11	a	310	b	a	u380f	u350f	350	300	300	320	c	c	c	c	340	340	310	350	s	350	s370	370	410	450
12	400	420	b	b	a	b	b	300	300	300	330	340	360	370	360	r	330	340	s	350	u430	f	a	b
13	b	400	f	350	u330f	u340f	200	300	300	300	330	r	r	r	r	r	r	r	s	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	c	r	330	r	s	s	s	s	s	350	s	s	s
16	s	s	s	390	250	f	310	300	280	r	320	r	r	r	s	s	s	s	f	f	f	f	400	390
17	f	a	a	430	b	b	s	310	s	320	400	400	400	r	s	350	s	360	f	b	a	a	b	b
18	a	b	b	a	a	a	b	330	b	350	350	370	350	340	350	s	330	f	a	u440s	b	b	a	a
19	u450f	a	a	a	u390f	370	360	330	s	320	350	350	350	350	r	c	330	d	450	a	a	a	a	a
20	a	a	a	a	a	b	a	340	330	350	360	380	360	370	370	350	s	350	s	350	400	430	f	400
21	u410f	a	400	400	390	350	350	c	310	310	310	r	350	350	350	s	s	f	350	c	c	c	c	c
22	c	a	400	400	450	b	b	b	b	a	w	c	c	c	c	c	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	230	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	f
25	330	240	f	310	310	290	300	290	270	280	r	320	s	310	320	320	300	s	s	s	s	f	300	350
26	450	350	380	350	f	f	310	300	280	300	310	300	300	310	300	310	300	400	b	f	b	f	b	f
27	450	410	430	310	350	390	b	b	b	b	340	f	b	b	b	b	b	a	a	a	b	b	a	
28	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	430	b	f	450	a	a	a
29	a	a	400	360	340	300	b	330	270	300	360	300	400	350	f	s	410	a	a	a	400	a	a	b
30	b	a	a	400	360	350	350	350	290	280	270	300	300	340	f	350	410	a	a	a	a	a	a	a
31																								
Median	u405	u390	u400	360	350	350	330	310	300	300	340	340	355	350	340	u340	u330	355	-	u350	u380	-	u400	u380
No.	8	9	6	13	13	12	10	18	17	18	17	13	12	14	10	7	9	8	4	7	9	4	5	7

14b

Unit 1 km.

HOURLY VALUES OF foF1 OBSERVED DURING APRIL 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2											451	471	491	1	1									
3											b	1	49	1	b	b	b							
4																								
5											441	44	43	1	1	421	1							
6											411	1	e	1	1									
7												1	1	1	1	1								
8																								
9										1	1													
10																								
11																								
12												1	1	b	b									
13													b	b										
14																								
15														1										
16																								
17											1	1	1	1	1	b								
18													1	1	1	1								
19										1	1	1	1	1	1	1								
20										1	1	47	1	1										
21																								
22											38													
23																								
24																								
25																								
26																								
27																								
28																								
29											1		b	b										
30																								
31																								
Median											-	-	-	-	-	-								
No.											4	3	3	0	0	1								

15a

Unit 0.1 Mc.

HOURLY VALUES OF foE OBSERVED DURING APRIL, 1956, AT MACQUARIE ISLAND.

Sweep : 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									b	b	b	b	b	b	b	c	b	a	a					
2								a	u245r	u275r	295	b	u310r	u310r	u295b	280	c	c	c					
3								b	b	b	b	b	b	b	b	b	b	b	b					
4								c	c	c	b	b	b	b	b	b	b	190						
5								190f	b	b	b	315	320	b	b	b	b	205	175f					
6									b	u285r	295	310	c	310	295	270	220	a						
7									b	b	b	b	b	b	b	b	a	a						
8								185	a	a	b	b	b	b	b	b	b	b						
9								a	b	b	b	b	b	a	c	c	c	c						
10								c	c	c	c	c	c	c	c	c	b	185						
11							a	215	a	b	c	c	c	c	b	b	b	u185b						
12								b	b	b	b	b	b	b	b	b	b	180						
13								200f	b	b	b	b	b	b	b	b	b	b						
14								c	c	c	c	c	c	c	c	c	c	c						
15								c	c	c	c	c	b	b	a	195	205	170						
16								b	b	u310	r	r	310	a	u310r	a	225							
17								b	b	r	b	b	u315r	b	b	b	r							
18								b	b	b	b	b	b	b	b	200	240							
19								175	u225r	r	b	b	b	e	b	b	b							
20								e	250	u290r	b	b	b	b	b	b	b	b	b					
21									b	b	b	b	b	b	b	b	b	a						
22								b	b	b	a	b	c	c	c	c	c	c						
23								c	c	c	c	c	c	c	b	c	c	c						
24								c	c	c	c	c	c	c	c	c	c	c	c					
25									210	r	b	b	b	b	b	250	e190a							
26								e160b	215	u265r	b	b	b	b	b	235	b							
27								b	b	b	b	b	b	b	b	b	b	a						
28								c	c	c	c	c	c	c	c	c	b							
29									b	u265r	b	b	b	b	b	b	b							
30									a	a	a	b	b	b	b	b								
31																								
Median								185	225	u280	-	-	-	-	-	240	220	185	-					
No.								7	5	6	2	2	4	3	3	6	5	6	1					

15b

Unit 0.01 Mc.

HOURLY VALUES OF fF2 OBSERVED DURING APRIL, 1956. AT MACQUARIE ISLAND.

Sweep: 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	57	57	b	b	b	b	b	b	b	b	b	b	b	a	b	47	53	55	48	56	d 68s	24
2	38	d 21c	b	b	b	38	e	19	g	g	g	u 35r	d	30	g	g	c	c	c	c	c	c	c	24
3	b	58	59	59	48	b	b	b	b	b	b	b	b	b	b	b	b	b	59	74	d 72s	d 69s	b	36
4	b	37	59	b	a	a	a	a	a	a	b	b	b	b	b	b	b	g	d 21c	d 21c	b	b	b	d 64s
5	b	37	48	38	37	d 21c	b	g	b	b	b	b	b	b	b	b	b	d 21c	e	e	e	d 21c	d 21c	e
6	b	b	37	37	37	d 21c	b	b	b	d 21c	29	29	c	g	21	21	23	d 21c	e	b	b	37	54	d 55s
7	d 57s	39	b	29	24	20	b	19	b	b	b	b	b	b	b	b	29	28	24	59	38	38	48	d 59s
8	b	b	b	37	b	b	b	g	d 21c	27	b	b	b	b	b	b	b	b	b	54	d 21c	49	30	d 52s
9	44	39	d 21c	b	e	e	e	19	b	b	b	b	b	s	c	c	c	c	e	e	44	58	25	e
10	24	e	e	e	e	c	c	c	c	c	c	c	c	c	c	c	b	g	e	49	b	b	b	37
11	d 67s	59	b	52	24	21	23	g	d 21c	b	c	c	c	c	b	b	b	e	e	e	e	e	24	74
12	d 57s	34	b	b	53	b	b	b	b	b	b	b	b	b	b	b	b	g	24	d 21c	37	37	d 59s	b
13	b	b	e	54	e	e	e	g	b	b	b	b	b	b	b	b	b	b	e	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	c	b	g	59	24	g	e	e	e	e	e	e	e
16	e	e	e	e	e	d 21c	26	b	25	g	g	g	g	34	g	25	g	e	e	e	e	e	e	24
17	25	d 57s	d 57s	d 57s	b	b	49	b	b	g	b	b	g	b	b	59	g	24	33	b	70	88	b	b
18	56	b	b	57	d 56s	37	b	b	b	b	b	b	b	b	b	g	g	44	d 88s	b	b	b	d 57s	44
19	29	d 55s	48	57	24	e	e	e	g	g	b	b	b	e	b	b	b	36	73	29	37	49	47	52
20	52	d 59s	66	62	59	b	29	e	g	g	b	b	b	b	b	b	b	b	b	b	e	b	25	25
21	49	d 57s	31	d 21c	e	25	d 21c	c	b	b	b	b	b	b	b	b	b	d 21c	21s	c	c	c	c	c
22	c	58	32	26	39	b	b	b	b	70	30	b	c	c	c	c	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	37
25	29	25	e	e	e	e	e	e	21	g	b	b	b	b	b	g	d 21c	e	e	e	e	e	e	21
26	d 56s	d 59s	d 56s	25	39	e	21	e	g	g	b	b	b	b	b	g	b	52	b	65	b	b	b	b
27	29	32	d 57s	29	d 21c	32	b	b	b	b	b	b	b	b	b	b	b	73	113	125	120	b	b	74
28	60	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	38	88	120	74
29	42	38	25	25	e	e	b	e	b	g	b	b	b	b	b	b	b	47	74	74	120	120	100	b
30	b	59	29	e	e	20	d 21c	d 21c	25	25	31	b	b	b	b	b	74	74	72	78	49	100	59	62
31																								
Median	44	39	42	37	24	20	21	-	21	-	29	-	-	-	-	21	-	26	22	52	38	49	48	37
No.	17	19	18	20	19	13	10	13	9	12	5	3	2	5	4	8	7	16	20	16	17	16	16	21

16a

Unit 0.01 Mc.

HOURLY VALUES OF h'F2 OBSERVED DURING APRIL 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2											1	1	1	1										
3											360	1	340	350	350	b	b							
4																								
5											300	300	290	1	290	280	290							
6											290	1	c	1	1									
7												300	1	1	1	1								
8																								
9										270	1													
10																								
11																								
12												1	1	b	b									
13													280	b										
14																								
15														250	250									
16																								
17											1	1	1	1	1	330								
18																								
19										1	1	1	1	1	1	1								
20										1	1	350	1	1										
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29											250		310	320										
30																								
31																								
Median										-	-	-	-	-	-	-	-							
No.										1	4	3	4	3	3	2	1							

16b

Unit 1 km.

HOURLY VALUES OF foF2 OBSERVED DURING MAY, 1956. AT MACQUARIE ISLAND.

Sweep: 1.0– 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	a	a	b	b	b	b	47	b	60	63	74	79	85	94f	44f	f	49f	a	b	b	b	b
2	b	57f	57f	48f	b	a	b	36	49	59	71	74	85	80	84	88	89	77	60f	48	44	40	f	f
3	43f	47f	u 42f	37f	36f	38f	u 29f	40	63	74	85	93	d 93r	104	d 95r	d 95r	d 85r	87	74	d 54r	f	25	a	a
4	a	59f	s	f	55f	b	40f	46f	66	83	d 87r	105	107	d105r	d 95s	d 87s	d 87s	d 87s	83	d 61s	s	a	f	a
5	a	f	f	s	f	f	53f	u 55f	69	81	92	94	d 93r	d100r	b	110	d 90s	f	49f	f	d 59s	a	a	a
6	46f	f	51f	47f	b	b	41f	40	78	65	72	75	82	85	d 78s	d 83s	83	84	f	c	c	c	c	58f
7	f	f	a	a	b	36f	36	42	63	70	85	93	100	99	s	c	c	c	c	c	f	46f	57f	52f
8	59f	s	59f	d 59s	d 59s	d 49s	f	b	63	78	87	95	97	103	108	d 88s	d 88s	d 85s	77	69s	s	53s	f	48
9	57f	54f	60f	d 59s	d 54s	u 40f	f	40	65	79f	d 83s	d102s	d102s	d102s	d102s	d 88s	d 88s	d 88s	d 83s	66	d 66s	59	s	50
10	45	40	39	37	36	37	33	44	s	90	d100r	110	d115r	126	d115r	d105s	d 88s	d 88s	85	d 70s	d 63s	55f	54	47
11	48	42	40	39	36	36	32	43	s	88	d 80s	d 88r	120	d 87r	b	d 67s	d 74s	d 74s	d 69s	u 66s	u 61s	58	d 48c	44f
12	38	35	48f	43f	36	d 34s	36	46f	d 67s	d 74s	d 77c	d 77c	d 77c	113	d 88s	d 83s	d 59s	s	54f	b	b	b	b	b
13	b	b	b	a	b	44f	42	44	50	62	65	73	74	80	81f	f	w	f	a	a	a	f	f	a
14	b	a	a	a	b	b	b	34	54	65	77	b	95	103	d88s	d 83s	85	s	56f	b	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	79	88	87	98	81f	56	49f	a	b	b	a	b	b	b
16	b	b	b	b	a	b	b	b	b	51	b	60	69	68f	b	56	47f	b	a	f	a	a	a	a
17	a	b	b	a	b	b	a	b	b	b	b	b	w	b	b	a	b	a	a	a	b	a	b	b
18	a	b	a	a	b	b	b	28	42	53	59	64	70	76	83	69f	41	a	b	b	a	b	c	a
19	30f	f	f	b	31f	31f	30	34	56	71	80	88	90	95	102	d 90s	d 90s	79	59f	43f	a	a	b	a
20	s	49f	45f	48f	c	c	c	c	57	71s	73	87	95	87	d 90s	100	97	85	64	c	c	c	c	b
21	w	f	a	49f	46f	f	48f	48f	50f	70f	70f	b	b	87f	f	59f	44	f	a	a	a	a	a	u41f
22	38	f	u 36f	34f	33f	32f	28f	31	53	65	83	88	93	d 80s	93	d 88s	d 83s	f	f	a	a	a	a	b
23	b	b	a	a	a	b	b	b	48	59f	58	65	70	69	75	u 78s	76f	u 74f	64f	u 52f	a	a	a	a
24	b	b	b	b	b	u 56f	50f	44f	52f	61	b	88	d103s	f	f	48f	a	a	a	a	a	b	b	a
25	a	a	b	b	b	b	b	b	b	b	b	f	b	b	b	b	a	b	a	a	b	a	a	a
26	a	a	a	a	b	a	b	f	40	67	82	92	c	c	c	c	c	c	c	c	c	c	c	c
27	35	34	21	c	31	32	b	b	41	54	66f	83f	d 83r	f	b	b	d 87r	d 71s	f	b	b	39	35	a
28	b	25	22	b	21	20	20	22	44	58	68	79	b	93	93	f	54f	48f	a	43f	f	a	a	a
29	a	a	a	34f	26f	25f	26	27	49	59	69	82	87	d 87r	u 93r	s	u 77s	68f	51	37	f	f	f	d48f
30	d 47f	a	a	49f	50f	54f	58f	49f	a	b	66	71	78	72	d70s	77	s	a	a	a	a	a	a	a
31	a	a	a	a	b	b	b	b	b	66	69	81	86	89	d 83r	90	85	75	59	49	47	38	34	33
Median	45	44	44f	47f	36	36f	36	41	53	66	77	88	92	93	93	88	85	84	62	52	u 61	46	d 48	u48
No.	11	10	12	13	14	14	16	20	23	26	27	26	24	23	15	15	21	13	16	11	5	9	5	9

17a

Unit 0.1 Mc.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING MAY, 1956. AT MACQUARIE ISLAND.

Sweep: 1.0 – 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	a	a	b	b	b	b	295	b	290	285	285	285	290	f	290f	f	255f	a	b	b	b	b
2	b	u230f	255f	250f	b	a	b	295	320	305	310	330	300	295	300	300	300	295	295	385	270	270	f	f
3	255	245f	u255f	270f	275f	270f	f	300	320	325	315	315	r	305	r	r	r	300	305	r	f	255	a	a
4	a	f	s	f	260f	b	280f	305f	330	310	r	315	295	r	s	s	s	s	300	s	s	a	f	a
5	a	f	f	s	f	f	295f	u275f	305	315	295	290	r	r	b	280	s	f	u240f	f	s	a	a	a
6	f	f	f	260	b	b	u270f	270	290	295	300	290	300	285	s	s	270	290	f	c	c	c	c	u245f
7	f	f	a	a	b	u280f	265	270	315	325	310	315	300	300	s	c	c	c	c	c	s	250f	240f	205f
8	u325f	s	245f	s	s	s	f	b	300	315	310	300	300	300	300	s	s	s	290	280s	s	280s	f	250
9	250f	260f	250f	s	s	f	f	290	330	285f	s	s	r	r	r	s	s	s	s	275	s	285	s	275
10	265	265	255	265	270	285	275	285	s	310	r	290	r	310	r	s	s	s	270	s	s	260f	275	295
11	265	255	265	275	265	300	290	280	s	315	s	r	300	r	b	s	s	s	s	u300s	u300s	305	c	290
12	275	285	265f	285f	275	s	295	295f	s	s	c	c	c	295	s	s	s	s	240f	b	b	b	b	b
13	b	b	b	a	b	f	290	265	285	295	275	285	290	275	275f	f	w	f	a	a	a	f	f	a
14	b	a	a	a	b	b	b	275	305	310	310	b	300	315	s	s	330	s	265f	b	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	310	300	290	280	270f	295	275f	a	b	b	a	b	b	b
16	b	b	b	b	a	b	b	b	b	285	b	265	275	u260f	b	275	280f	b	a	f	a	a	a	a
17	a	b	b	a	b	b	a	b	b	b	b	w	b	b	a	b	a	a	b	a	b	a	b	b
18	a	b	a	a	b	b	b	270	310	330	280	305	315	300	295	295f	295	a	b	b	a	b	c	a
19	f	f	f	b	280	275f	285	290	335	330	320	305	315	300	305	s	s	305	u295f	285f	a	a	b	a
20	s	280	280	u290f	c	c	c	c	310	315s	315	320	320	315	s	305	310	305	270	c	c	c	c	b
21	w	f	a	275f	270f	f	270f	285f	u285f	f	285	b	b	280	f	285f	250f	f	a	a	a	a	a	f
22	270	f	f	260	370f	275f	285f	275	320	330	320	320	325	s	295	s	s	f	f	a	a	a	a	b
23	b	b	a	a	a	a	b	b	300	300	315	295	305	305	305	u305s	290f	u300f	275f	f	a	a	a	a
24	b	b	b	b	b	u280f	280f	300f	310	295	b	275	s	f	f	290f	a	a	a	a	a	b	b	a
25	a	a	b	b	b	b	b	b	b	b	b	f	b	b	b	b	a	b	b	a	b	a	a	a
26	a	a	a	a	b	a	b	f	300	310	315	315	c	c	c	c	c	c	c	c	c	c	c	c
27	280	275	290	c	275	270	b	b	305	305	290f	290f	r	f	b	b	r	s	f	b	b	295	275	a
28	b	285	280	b	280	285	280	280	310	315	305	305	b	300	300	f	300f	270f	f	a	270f	f	a	a
29	a	a	a	f	270f	290	295	270	325	330	320	340	315	r	u340r	s	u300s	300f	300	270	f	f	f	f
30	f	a	a	285f	280f	285f	285f	280f	b	b	300	280	280	315	s	290	s	a	a	a	a	a	a	a
31	a	a	a	a	b	b	b	b	b	315	320	305	310	310	r	315	310	300	2 90	300	285	290	280	280
Median	u265	u265	260	270f	275	280f	285	280	310	310	310	300	300	300	300	295	290	u300	280	u285	-	u280	-	u275
No.	9	9	10	10	12	11	15	20	22	24	22	24	20	20	11	11	14	9	14	7	4	9	4	7

17b

Unit 0.01

HOURLY VALUES OF h'F OBSERVED DURING MAY, 1956, AT MACQUARIE ISLAND.

Sweep: 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	a	a	b	b	b	b	b	b	b	b	b	250	250	b	280	a	390	a	b	b	b	b
2	b	350	320	360	b	a	b	280	250	250	b	b	b	b	b	250	240	240	240	250	270	280	300	300
3	310	320	290	290	280	250	250	250	250	230	240	250	250	250	250	240	230	230	230	250	300	350	a	a
4	a	350	300	270	270	b	280	250	240	250	230	250	250	250	250	240	240	240	240	250	300	a	320	a
5	a	350	340	340	310	260	250	250	250	250	250	250	250	250	b	250	250	270	380	270	300	a	a	a
6	350	300	300	300	b	b	a	b	b	260	260	280	280	260	270	250	250	230	250	c	c	c	c	290
7	270	a	a	a	b	300	250	250	250	250	250	250	250	250	250	c	c	c	c	c	340	300	350	400
8	330	300	290	260	250	250	250	b	250	250	250	250	250	250	250	240	250	220	210	250	250	260	270	280
9	280	280	290	250	250	250	250	250	230	230	230	250	240	240	250	250	220	230	240	250	250	250	260	260
10	270	290	290	290	280	260	250	250	240	240	240	250	230	240	250	240	230	230	230	240	240	230	250	250
11	260	270	280	270	270	220	250	250	230	230	240	230	240	250	b	b	240	250	230	260	280	260	250	260
12	280	350	300	220	300	250	250	250	250	250	230	240	250	250	250	250	280	280	280	b	b	b	b	b
13	b	b	b	a	b	380	340	320	300	300	b	280	270	300	310	300	450	a	a	a	a	a	a	a
14	b	a	a	a	b	b	b	300	270	280	250	b	250	250	250	240	240	240	280	b	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	b	280	b	280	b	b	a	a	b	b	a	b	b	b
16	b	b	b	b	a	b	b	b	b	e	b	270	b	b	b	330	260	b	a	310	a	a	a	a
17	a	b	b	a	b	b	a	b	b	b	b	b	b	b	b	a	b	a	a	a	b	a	b	b
18	a	b	a	a	b	b	b	a	280	270	300	300	250	280	280	280	a	a	b	b	a	b	c	a
19	350	320	310	b	350	330	280	270	250	250	250	240	250	250	250	230	240	240	240	270	a	a	b	a
20	a	400	320	290	c	c	c	c	250	240	240	250	250	230	250	240	230	230	250	c	c	c	c	b
21	410	300	a	310	280	300	240	b	b	b	b	b	b	b	b	a	330	320	a	a	a	a	a	320
22	a	a	320	300	330	230	a	a	350	240	250	250	250	250	240	230	240	350	330	a	a	a	a	b
23	b	b	a	a	a	b	b	b	280	280	280	260	260	260	260	250	240	240	260	280	a	a	a	a
24	b	b	b	b	b	300	260	260	260	270	b	300	280	300	350	a	a	a	a	a	a	b	b	a
25	a	a	b	b	b	b	b	b	b	b	b	300	300	b	b	b	a	b	a	a	b	a	a	a
26	a	a	a	a	b	a	b	a	a	250	250	250	c	c	c	c	c	c	c	c	c	c	c	c
27	280	310	b	a	300	300	b	b	280	b	270	b	300	250	b	b	260	240	b	b	b	290	300	a
28	b	b	b	b	b	b	b	b	280	250	250	280	b	270	270	b	230	260	250	a	300	260	a	a
29	a	a	a	350	b	b	b	b	250	250	b	250	240	240	250	240	230	240	250	280	280	270	290	300
30	290	a	a	a	310	300	300	280	b	b	b	290	290	250	290	270	340	a	a	a	a	a	a	a
31	a	a	a	a	b	b	b	b	b	250	250	250	250	250	250	250	270	270	270	260	270	290	280	300
Median	285	315	300	290	280	260	250	250	250	250	250	250	250	250	250	250	240	240	250	260	280	270	285	295
No.	12	14	13	14	13	15	14	14	21	23	20	25	23	25	21	20	24	20	19	13	12	11	10	10

18a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING MAY, 1956, AT MACQUARIE ISLAND.

Sweep: 1.0 - 16.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	a	a	b	b	b	b	b	b	340	330	330	330	320	340	300	f	400	a	b	b	b	b
2	b	370	370	430	b	a	b	320	280	310	300	280	300	280	290	310	300	300	280	340	380	380	f	f
3	400	340	u330f	340	350	320f	u290f	300	270	270	290	290	r	300	r	r	r	300	300	r	f	300	a	a
4	a	360	s	f	300	b	310	300	270	290	r	300	320	r	s	s	s	s	310	s	s	a	f	a
5	a	f	f	s	f	f	240	300	300	290	330	310	r	r	b	340	s	f	440	f	s	a	a	a
6	400	f	340	310	b	b	320	350	330	300	300	370	300	330	s	s	340	330	f	c	c	c	c	340
7	f	f	a	a	b	350	320	330	290	280	300	300	300	300	s	c	c	c	c	c	f	370	370	400
8	390	s	330	s	s	s	f	b	300	270	300	310	310	300	300	s	s	s	320	340	s	350	f	390
9	330	330	340	s	s	280	f	370	280	290	s	s	r	r	r	s	s	s	s	370	s	340	s	350
10	360	350	420	370	350	330	330	330	s	280	r	310	r	300	r	s	s	s	320	s	s	290	300	350
11	350	330	380	360	370	310	310	320	s	300	s	r	300	r	b	s	s	s	s	300	330	300	300	340
12	370	360	310	330	380	s	320	330	s	s	c	c	c	340	s	s	s	s	400	b	b	b	b	b
13	b	b	b	a	b	380	350	370	350	340	340	340	300	350	370	f	w	f	a	a	a	f	f	a
14	b	a	a	a	b	b	b	350	310	310	300	b	310	310	s	s	310	s	340	b	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	300	320	350	320	350	300	360	a	b	b	a	b	b	b
16	b	b	b	b	a	b	b	b	b	350	b	380	350	360	b	330	290	b	a	f	a	a	a	a
17	a	b	b	a	b	b	a	b	b	b	b	b	w	b	b	a	b	a	a	s	b	a	b	b
18	a	b	a	a	b	b	b	380	310	280	340	310	290	330	330	310	350	a	b	b	a	b	c	a
19	350	f	f	b	370	360	330	330	280	280	280	300	280	310	310	s	s	310	310	340	a	a	b	a
20	s	300	350	310	c	c	c	c	300	280	280	280	300	260	s	310	310	300	350	c	c	c	c	b
21	w	f	a	330	290	f	350	370	320	340	340	b	b	360	f	350	250	f	a	a	a	a	a	380
22	420	f	360	350	330	340	330	310	300	280	290	290	280	s	320	s	s	f	f	a	a	a	a	b
23	b	b	a	a	a	b	b	b	300	300	280	320	310	320	310	300	320	u330f	350	330	a	a	a	a
24	b	b	b	b	b	330	310	300	300	330	b	330	s	f	f	330	a	a	a	a	a	b	b	a
25	a	a	b	b	b	b	b	b	b	b	b	f	b	b	b	b	a	b	a	a	b	a	a	a
26	a	a	a	a	b	a	b	f	300	300	240	300	c	c	c	c	c	c	c	c	c	c	c	c
27	350	380	330	c	350	350	b	b	310	320	300	300	r	f	b	b	r	s	f	b	b	350	360	a
28	b	360	350	b	340	340	320	350	300	280	300	300	b	300	300	f	270	310	c	a	360	f	a	a
29	a	a	a	310	350	320	330	330	280	280	280	280	290	r	260	s	u300s	280	310	390	f	f	f	f
30	f	a	a	330	330	330	310	300	b	b	330	310	310	280	s	300	s	a	a	a	a	a	a	a
31	a	a	a	a	b	b	b	b	b	290	280	290	300	290	r	300	270	290	360	320	340	350	350	350
Median	370	355	345	330	350	330	320	330	300	290	300	305	300	310	310	310	305	u300	330	u340	-	u350	u350	u350
No.	11	10	12	11	12	13	16	20	21	25	22	24	20	20	11	12	14	9	14	8	4	9	5	8

18b

Unit 1 km

HOURLY VALUES OF foE OBSERVED DURING MAY, 1956. AT MACQUARIE ISLAND.

Sweep : 1.0 - 16.0 Mc/s in 1m 5s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06*	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									b	b	b	b	b	b	u265r	b	195f							
2									205	b	b	b	b	b	b	b	180							
3									195	e	285b	u275r	b	b	b	230	185							
4									205f	b	b	b	b	b	b	215								
5									195	b	b	b	b	b	b	b	185							
6									b	b	b	b	b	b	b	b	b							
7									200	e	b	b	b	b	b	c	c							
8									b	b	b	b	b	b	b	b	b							
9									195	u320a	b	b	b	b	b	u225r	180							
10									205	b	b	b	b	b	b	b	e							
11									200f	b	b	b	b	b	b	b	b							
12									b	b	b	b	b	b	b	b	175							
13									200	b	b	b	b	b	b									
14									195	b	a	b	b	b	b	b	e							
15									b	b	e	b	b	b	b	b	a							
16									b	e	b	a	b	b	b	b	e							
17									b	b	b	b	b	b	b									
18									205	b	a	b	b	b	b	b	a							
19									a	240r	a	b	b	r	b	210								
20									u185a	220	b	270	b	b	b	205	u170b							
21									b	b	b	b	b	b	b	a	195							
22									180	a	a	u280r	b	b	a	200								
23										210	b	b	b	b	b	a	a							
24									a	b	b	b	b	b	b	b								
25									b	b	b	b	b	b	b									
26									b	b	b	b	c	c	c	c	c							
27									a	b	b	b	b	b	b	b	b							
28									b	215	b	b	b	b	b	b	b							
29									b	b	b	b	b	b	b	200								
30									b	b	b	b	b	b	b	b								
31									b	b	b	b	b	b	b	b	b							
Median									200	210	-	-	-	-	-	210	180							
No.									13	8	2	3	0	0	1	7	11							

19a

Unit 0.01 Mc.

HOURLY VALUES OF fEs OBSERVED DURING MAY, 1956. AT MACQUARIE ISLAND.

Sweep : 1.0-13.0 Mc/s in 1m 55s. 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	59	d 58s	83	60	b	b	b	b	b	b	b	b	b	b	g	b	g	41	74	103	b	b	b	b
2	b	25	25	44	b	32	b	e	d 21c	b	b	b	b	b	b	b	b	e	e	e	e	35	d 21c	24
3	39	24	e	e	e	e	e	e	g	e	b	g	b	b	b	g	g	e	e	e	e	25	d 46s	d 57s
4	d 56s	37	25	e	24	b	e	20	g	b	b	b	b	b	b	g	e	e	e	e	e	d 56s	25	59
5	59	d 56s	d 56s	54	d 57s	25	e	e	g	b	b	b	b	b	b	b	e	25	41	25	47	d 56s	59	34
6	d 21c	e	38	54	b	b	25	b	b	b	b	b	b	b	b	b	b	b	e	c	c	c	c	e
7	e	34	44	38	b	e	e	e	e	e	b	b	b	b	b	c	c	c	c	24	35	29	44	
8	e	e	e	e	e	e	e	b	b	b	b	b	b	b	b	b	b	e	e	e	e	e	e	e
9	e	e	e	e	e	e	e	d 71c	24	24	b	b	b	b	b	g	e	e	e	e	e	e	e	e
10	e	e	e	e	e	e	e	e	e	b	b	b	b	b	b	b	e	e	e	e	e	e	e	e
11	e	e	e	e	e	e	e	e	g	b	b	b	b	b	b	b	b	b	b	b	b	e	e	e
12	e	e	e	e	e	e	e	e	b	b	b	b	b	b	b	b	g	e	e	b	b	b	b	b
13	b	b	b	60	b	e	b	e	g	b	b	b	b	b	b	25	e	25	115	74	d 55s	41	57	85
14	b	59	59	59	b	b	b	e	d 21c	b	26	b	b	b	b	b	e	e	d 21c	b	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	e	b	b	b	b	b	36	37	b	b	62	b	b	b
16	b	b	b	b	114	b	b	b	b	e	b	25	b	b	b	b	54	b	83	54	85	69	44	74
17	73	b	b	68	b	b	88	b	b	b	b	b	b	b	b	60	b	69	100	87	b	50	b	b
18	52	b	59	54	b	b	b	21	d 21c	b	64	b	b	b	b	b	34	49	b	b	36	b	c	46
19	25	38	21	b	31	d 21c	e	e	23	g	d 21c	b	b	g	b	g	e	e	e	24	52	49	b	39
20	46	24	27	23	c	c	c	c	23	d 21c	b	g	b	b	b	g	e	e	e	c	c	c	c	b
21	44	37	59	49	25	26	21	b	b	b	b	b	b	b	b	a	22	49	52	59	52	69	49	43
22	37	27	d 21c	e	e	e	48	25	d 21c	24	25	g	b	b	25	24	e	e	25	55	54	54	d 59s	b
23	b	b	d 59s	69	69	b	b	b	e	23	b	b	b	b	b	24	25	e	25	21	48	37	83	55
24	b	b	b	b	b	44	d 21c	e	d 21c	b	b	b	b	f	b	26	69	79	59	98	83	b	b	59
25	39	59	b	b	b	b	b	b	b	b	b	b	b	b	b	b	126	b	83	102	b	44	84	d59s
26	36	83	59	58	b	28	b	21	27	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c
27	e	e	e	24	24	e	b	b	21	b	b	b	b	b	b	b	b	b	b	b	b	e	e	64
28	b	e	e	b	e	e	e	e	b	g	b	b	b	b	b	b	b	e	21	25	21	27	49	d55s
29	d 55s	30	23	d 21c	e	e	e	e	e	b	b	b	b	b	b	g	e	e	e	e	22	e	21	22
30	22	d 56s	d 54s	34	31	d 21c	b	27	b	b	b	b	b	b	b	b	35	51	64	56	49	39	39	49
31	56	57	d 59s	d 59s	66	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e	e	e	d 21c	23
Median	38	28	26	41	24				21		25								23	25	36	36	42	44
No.	22	24	24	24	18	19	17	19	19	9	5	4	0	0	2	11	21	23	23	21	21	22	18	23

19b

Unit 0.1 Mc.

HOURLY VALUES OF foF2 OBSERVED DURING JUNE 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	29	29	26	25	27	27	24	23	49	75	79	89	96	90	u109s	59f	a	a	a	a	a	a	s	a
2	b	b	b	b	b	b	30	a	44	56	64	74	82	98	75	61	f	44f	47f	35f	35f	34f	34	a
3	46f	a	a	47f	48f	b	42f	31	49	69	83	103	97	101	100	98	88	71f	59	50	43	34	f	u49f
4	c	c	42f	f	38f	43f	u 43f	32	51	u 66s	77	82	95	96	s	98	s	69f	58f	44f	s	41f	49f	49f
5	44	35	u 46f	u 48f	44f	48f	47f	36f	53	66	77	87	91	90	95	100	89	s	55	u 49f	49f	49f	u 49f	s
6	45f	49f	41f	39f	38f	38f	37	31	49	71	79	95	95	94	u110r	100	88	u 77s	s	51f	s	u 49f	49f	a
7	u 49f	b	b	f	42	32f	30f	29f	47f	67f	82f	89	90	95	u126s	98	81	71	s	35	20	s	48	c
8	c	42	39f	38f	34f	34f	33f	31f	51	72	71	89	97	90	103	93	s	f	40	s	a	a	f	43f
9	44f	37f	45f	f	39f	37f	36f	34f	51	65	f	95	93	95	95	82	55	a	a	f	a	a	a	49f
10	f	39f	f	31f	29f	29f	24f	b	u 48f	u 71f	72	95	96	93	91	91	90	s	50f	33	a	44f	40f	44f
11	41f	39f	37f	34f	39f	a	u 33f	35	47	58	72	80	88	91	96	57f	39	a	f	a	u 49f	f	44f	a
12	a	a	b	39f	43f	a	a	a	44	66	71	98	98	100	u 98j	b	61	24	36	u 39f	34f	45f	44f	a
13	a	a	29	29	29f	27f	20f	20	45	66	76	89	97	90	c	84	u 79s	49f	31	32	37	44f	a	a
14	a	a	b	a	48f	37f	29	31	46	71	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	a	46	a	37	32	a	44	62	74	84	89	98	98	56	43	45f	44f	44	a	47f	a	a
16	a	b	45f	34	a	b	27f	28	44	68	b	b	b	95b	95	u100s	f	b	21	a	35	35f	a	a
17	b	37	41	38	35	33	b	b	44	68	79	92	92	93	94	u100s	88	f	54f	39f	b	a	25f	c
18	20	37f	45	a	b	b	u 44f	33	47	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	s	u 85j	91	u 96j	97	101	96	104	f	53	44f	f	34f	u 33f	33f
20	29f	29f	f	24f	32f	28f	28f	26f	48	c	100	96	98	101	102	91	82	f	59f	44	37	s	s	39f
21	41f	39f	44f	44f	39f	39f	39f	28f	44	63	83	u103b	101	108	111	91	f	54	35	62	25	f	31	29
22	a	a	39f	33f	30f	30	30	29	49	70	86	u105r	101	101	s	96	55	43	45	f	49f	45f	43f	32f
23	a	42f	a	a	34f	a	33	34	44	61	67	86	96	100	s	s	86	67	54	44	38	29	a	33
24	44f	35f	f	f	34f	29f	a	28	b	b	b	b	96	94	86	55	59	a	a	a	b	a	a	a
25	b	b	a	b	b	b	31	24	b	b	b	76	88	f	b	b	a	a	b	a	b	a	a	a
26	a	a	a	b	b	a	a	a	32	48	61	64	73	71	91	92	u 64s	38	a	a	a	a	a	b
27	a	a	a	a	a	32	21f	20f	35	52	60	69	73	71	u 77j	a	a	a	57	a	a	a	a	a
28	a	a	a	a	a	34f	25f	a	41	59	72	80	86	84	92	89	79	50	a	a	33f	44f	42f	a
29	a	29	29f	31f	29f	29f	25f	23	40	c	74	76	88	88	88	92	u 81j	58	a	a	b	a	b	a
30	a	49f	49f	37f	38f	s	39f	b	b	56	69	69	77	82	77	83	55	49	a	49f	49f	a	a	a
31																								
Median	44f	37f	41f	37f	38f	33f	31f	29	46	66	75	89	95	94	95	92	80	50	50	44	37	44f	43f	42f
No.	11	15	15	17	21	19	25	21	26	24	24	26	28	27	23	24	20	15	17	16	14	14	13	10

20a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING JUNE 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	26	27	27	29	30	31	30	32	33	32	34	31	29	u30s	31	a	a	a	a	a	a	s	a
2	b	b	b	b	b	b	31	a	31	31	31	30	32	32	31	30	f	28	29	29	29	30	28	a
3	27	a	a	27	28	b	31	29	32	33	31	32	33	31	32	33	30	29	33	30	30	29	f	f
4	c	c	28	f	28	29	a28f	29	33	u 34s	32	33	31	31	s	32	s	29	29	30	s	25	26	27
5	28	27	u 26f	u 27f	27	29	29	29	31	32	31	31	32	33	30	30	31	s	29	f	27	28	f	s
6	28	28	28	28	28	28	29	30	31	33	32	32	32	33	u 29r	31	31	u 29s	s	30	s	f	27	a
7	f	b	b	f	28	28	28	29	33	31	31	32	34	32	s	30	31	31	s	27	27	s	27	c
8	c	26	27	26	27	28	29	29	32	33	30	29	31	30	31	31	s	f	30	s	a	a	f	26
9	f	27	26	f	27	28	30	28	32	31	f	30	32	31	32	31	27	a	a	f	a	a	a	28
10	f	25	f	27	28	28	30	b	u 30f	u 30s	32	31	31	31	32	32	32	s	31	27	a	f	25	27
11	27	27	26	28	28	a	f	30	32	32	31	31	30	31	30	31	27	a	f	b	27	f	28	a
12	a	a	b	f	27	a	a	a	30	32	31	34	30	30	u 31j	b	29	26	26	f	f	26	25	a
13	a	a	27	27	25	28	30	30	31	31	32	31	32	28	c	31	u 30s	30	27	27	30	26	a	a
14	a	a	b	a	f	f	28	28	31	32	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	a	27	a	28	28	a	30	32	31	31	31	29	31	28	27	30	28	26	a	f	a	a
16	a	b	26	28	a	b	29	27	31	31	b	b	b	b	31	u 31s	f	b	28	a	28	27	a	a
17	b	27	26	28	28	28	b	b	30	33	33	32	32	31	32	u 31s	31	f	30	30	b	a	28	c
18	29	27	30	a	b	b	u 27f	29	31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	s	u 32j	31	30	32	31	31	32	f	30	27	f	28	f	27
20	27	28	f	29	28	28	28	28	32	c	32	32	32	32	31	32	28	f	30	29	27	s	s	29
21	28	26	26	26	28	29	28	30	32	31	31	u 30b	31	31	32	30	f	28	26	27	27	f	27	28
22	a	a	26	28	28	28	29	28	30	30	33	u 30r	30	32	s	30	30	27	26	f	29	29	f	26
23	a	28f	a	a	26f	a	28	27	31	30	32	31	34	32	s	s	31	32	31	29	28	28	a	26
24	f	27	f	f	27	28	a	29	b	b	b	b	30	30	31	29	30	a	a	a	b	a	a	a
25	b	b	a	b	b	b	28	27	b	b	b	31	27	f	b	b	a	a	b	a	b	a	a	a
26	a	a	a	b	b	a	a	a	30	32	29	32	30	31	32	31	u 28s	26	a	a	a	a	a	b
27	a	a	a	a	a	27	28	30	30	31	33	32	32	31	u 31j	a	a	a	30	a	a	a	a	a
28	a	a	a	a	a	28	30	a	32	33	33	33	33	30	33	33	31	30	a	a	27	27	26	a
29	a	26	27	26	28	30	30	30	32	c	33	32	32	32	32	33	u 31j	30	a	a	b	a	b	a
30	a	30	29	28	25	s	29	b	b	33	31	32	31	35	32	31	29	27	a	28	29	a	a	a
31																								
Median	u 28	27	27	27	28	28	29	29	31	32	32	32	31	31	31	31	30	29	29	28	28	28	27	27
No.	8	15	15	16	20	18	24	21	26	24	24	26	27	26	22	24	20	15	17	14	13	11	10	9

20b

Unit 0.1

HOURLY VALUES OF h'F OBSERVED DURING JUNE 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	310	310	310	300	280	260	270	250	240	240	240	250	240	250	250	a	a	a	a	a	a	s	a
2	b	b	b	b	b	b	a	a	a	260	250	250	250	250	250	260	250	370	270	230	280	300	320	a
3	370	a	a	300	300	b	260	260	240	240	230	250	240	240	230	230	220	230	280	250	270	280	300	280
4	c	c	300	290	310	280	260	270	240	250	250	240	250	240	250	230	220	230	250	280	240	300	270	330
5	a	a	340	a	a	280	250	250	250	250	250	240	250	240	200	240	230	230	250	300	290	290	270	s
6	a	300	300	300	290	270	260	250	240	240	250	240	240	240	250	230	240	240	240	260	330	270	300	a
7	a	b	b	f	300	290	280	270	250	250	240	250	250	240	250	230	240	240	260	300	b	s	280	290
8	300	300	300	300	280	270	260	250	240	250	220	230	250	250	250	240	240	250	250	s	a	a	f	300
9	290	300	300	a	320	280	270	260	250	250	250	260	250	240	240	240	260	a	a	a	f	a	a	310
10	310	350	300	290	280	290	250	b	b	240	250	260	250	250	240	230	250	240	250	320	a	a	a	320
11	310	320	290	290	340	a	310	290	270	250	280	250	250	250	260	270	280	a	f	a	a	a	a	a
12	a	a	b	330	350	a	a	a	260	250	250	240	250	240	240	b	b	370	350	320	300	300	320	a
13	a	a	340	310	300	300	280	280	260	250	250	250	240	260	250	230	240	230	310	300	250	320	a	a
14	a	a	b	a	270	260	290	260	250	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	a	a	a	290	300	a	260	b	250	260	270	270	260	290	300	a	310	400	a	a	a	a
16	a	b	350	320	a	b	300	300	260	250	b	b	b	b	240	250	260	b	350	a	340	a	s	a
17	b	300	300	290	280	260	b	b	260	250	240	240	240	250	240	250	250	250	250	260	b	a	300	c
18	a	350	a	a	b	b	250	250	250	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	s	240	240	250	240	240	240	240	240	250	300	280	270	300	260
20	290	300	300	310	310	260	250	250	240	c	230	240	240	230	240	220	240	250	200	270	280	s	300	270
21	300	310	320	300	290	270	250	250	250	250	250	250	250	250	250	240	240	280	300	300	330	320	300	290
22	a	a	340	320	310	320	300	310	250	250	240	250	250	240	270	240	250	300	a	280	250	280	290	300
23	300	310	230	a	330	a	a	280	250	250	240	250	240	250	250	240	240	240	250	260	270	310	a	340
24	310	300	300	290	300	300	a	340	b	b	b	b	270	280	260	a	a	a	a	a	b	a	a	a
25	b	b	a	b	b	b	300	330	b	b	b	b	330	300	b	b	a	a	b	a	b	a	a	a
26	a	a	a	b	b	a	a	a	280	270	260	260	230	240	250	250	250	a	a	a	a	a	a	a
27	a	a	a	a	a	a	a	a	270	280	b	280	270	260	260	a	a	a	a	a	a	a	a	a
28	a	a	a	a	a	310	280	a	250	250	250	250	250	230	250	240	230	270	a	a	a	300	300	a
29	a	a	a	a	a	a	280	270	260	c	250	240	250	a	250	280	290	240	a	300	b	a	b	a
30	a	300	300	290	260	280	290	b	b	250	250	250	250	250	250	250	a	310	a	300	a	a	a	a
31																								
Median	300	300	300	300	300	280	275	270	250	250	250	250	250	245	250	240	240	240	250	300	280	300	300	300
No.	10	13	17	16	19	18	22	20	24	22	24	25	27	26	27	24	22	19	17	18	13	12	13	11

21a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING JUNE 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	350	350	350	350	350	320	300	310	280	260	250	260	330	330	310	270	a	a	a	a	a	a	s	a
2	b	b	b	b	b	b	300	a	310	300	300	330	290	300	300	340	f	f	300	260	310	320	340	a
3	400	a	a	300	320	b	300	310	290	280	280	290	280	300	330	330	300	280	280	310	320	330	350	330
4	c	c	350	330	330	300	300	300	280	270	280	220	300	300	330	300	260	300	320	340	f	390	320	350
5	380	360	350	310	350	300	290	290	280	300	300	300	300	270	280	300	300	300	310	350	320	330	300	s
6	310	350	330	340	330	320	300	300	300	280	280	280	280	280	340	300	300	320	330	340	400	300	330	f
7	400	b	b	f	350	350	330	320	280	280	290	290	280	290	300	290	320	340	s	360	s	s	370	c
8	c	380	350	350	310	300	310	310	300	270	250	270	270	280	320	270	290	290	300	s	a	a	f	350
9	340	f	340	f	400	330	320	320	270	280	280	300	300	290	280	270	290	a	a	f	a	a	a	380
10	f	410	f	300	300	330	290	b	300	260	280	300	290	290	280	290	320	s	340	340	a	400	390	340
11	340	350	330	320	360	a	350	340	300	290	300	290	280	300	300	290	350	a	f	a	330	f	380	a
12	a	a	b	360	380	a	a	a	300	270	290	270	290	300	270	b	340	420	380	350	350	330	370	a
13	a	a	350	350	340	330	320	330	300	290	270	290	290	350	c	270	270	280	370	320	310	380	a	a
14	a	a	b	a	330	350	310	300	300	300	c	c	c	c	c	c	c	c	c	c	c	c	c	c
15	c	c	a	410	a	350	330	a	300	300	300	300	300	320	310	320	360	350	340	430	a	350	a	a
16	a	b	380	350	a	b	320	350	300	290	300	b	b	b	300	300	300	b	360	a	360	380	a	a
17	b	370	350	340	320	300	b	b	310	290	280	280	300	310	290	300	300	290	300	320	b	a	340	c
18	350	360	350	a	b	b	350	290	300	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	s	270	290	280	290	300	300	270	270	300	370	f	330	350	320
20	330	330	f	330	340	280	300	330	290	c	270	280	280	280	270	270	280	f	290	330	340	s	s	300
21	330	360	380	330	330	320	300	280	280	300	300	300	300	300	290	300	f	330	400	380	340	f	330	330
22	a	a	390	350	340	360	350	340	300	280	290	300	300	300	s	280	300	370	410	330	290	330	360	340
23	a	360	a	a	380	a	330	350	300	300	290	300	270	290	s	s	300	300	300	330	330	350	a	f
24	380	370	f	f	350	320	a	350	b	b	b	b	310	330	300	350	340	a	a	a	a	a	a	a
25	b	b	a	b	b	b	330	350	b	b	b	300	370	f	b	b	a	a	b	a	b	a	a	a
26	a	a	a	b	b	a	a	a	330	300	300	300	290	300	310	300	300	400	a	a	a	a	a	b
27	a	a	a	a	a	400	330	320	320	300	b	300	300	290	320	a	a	a	330	a	a	a	a	a
28	a	a	a	a	a	350	300	a	300	280	280	290	280	280	270	290	300	350	a	a	380	390	350	a
29	a	370	350	360	350	320	300	290	300	c	270	280	300	300	280	310	350	340	a	a	b	a	b	a
30	a	330	340	300	300	s	330	b	b	270	280	280	270	280	300	310	a	370	a	350	350	a	a	a
31																								
Median	350	360	350	340	340	320	310	320	300	285	280	290	290	300	300	300	300	325	325	340	335	340	350	u340
No.	11	14	15	18	21	19	25	21	26	24	25	26	27	26	24	24	22	18	18	17	14	14	14	9

21b

Unit 1 km

HOURLY VALUES OF foE OBSERVED DURING JUNE 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Day \ 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
1									b	250	a	b	b	b	b	u205f	b							
2										205	b	b	b	b	b	b	b							
3										205	b	b	b	b	b	a	b							
4									160	u210r	b	b	b	b	b	190								
5										200	b	b	b	b	b	b	b							
6										205	b	b	b	b	b	190								
7									b	b	b	b	b	b	b	e205b								
8									b	200f	a	b	b	b	b	b								
9									b	b	b	b	b	b	b	195f	b							
10									a	a	b	b	b	b	b	b								
11									b	b	b	b	b	b	b	a								
12									b	b	b	a	b	a	b	b	b							
13									a	u205f	a	b	b	b	b	b	b							
14									b	b	c	c	c	c	c	c	c							
15									b	b	b	b	b	b	b	a								
16										195	b	b	b	b	b	200f	b							
17										b	a	b	b	a	a	195f								
18										c	c	c	c	c	c	c								
19										c	230	r	a	a	a	a	a							
20										c	a	b	b	b	b	195a								
21										b	a	b	b	b	b	b	a							
22										b	b	b	b	b	b	b								
23										b	a	a	a	b	a	180	a							
24										b	b	b	b	b	a	a	a							
25										b	b	b	b	a	b	b	a							
26										200	b	b	a	a	a	195f	b							
27										a	b	b	b	a	220	a	a							
28										a	a	a	a	a	a230r	195	a							
29										c	a	a	a	a	a	a	b							
30										b	b	b	b	b	b	190	a							
31																								
Median									-	205	-	-	-	-	-	-	195							
No.									1	10	1	0	0	0	0	0	11							

22a

Unit 0.01 Mc

HOURLY VALUES OF fEs OBSERVED DURING JUNE 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Day \ 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
1	d 22	d 22	e	e	d 22	e	e	e	d 22	30	32	d 22	d 22	d 22	d 22	e	55	d 22	25	46	90	85	a	43
2	b	b	b	b	b	b	32	30	23	d 22	s	s	s	b	b	e	e	e	21	e	d 22	25	25	d 50s
3	d 50s	d 60s	43	45	25	b	26	e	d 22	d 22	b	b	b	d 22	b	30	e	d 22	d 22	d 22	e	e	21	e
4	e	e	d 22	42	d 22	21	d 22	e	21	d 22	d 22	s	b	d 22	d 22	g	b	d 22	b	d 22	e	e	d 22	26
5	28	41	45	d 53s	42	d 22	21	e	d 22	21	b	b	b	b	b	21	b	e	e	25	d 22	e	24	34
6	d 57s	25	d 22	e	e	e	e	e	e	21	b	b	b	b	b	21	b	e	d 22	e	e	24	30	43
7	50	b	b	32	26	e	e	e	b	d 22	b	20	b	b	g	g	g	e	s	e	e	s	e	e
8	25	e	e	e	e	e	e	e	b	26	35	30	b	b	b	b	b	e	e	32	36	50	30	26
9	42	e	26	26	45	22	e	30	d 22	d 22	b	b	b	b	b	b	21	50	58	25	49	d 59s	d 50s	30
10	32	26	25	22	20	40	e	b	25	23	b	b	b	b	22	b	e	e	e	26	30	d 58s	45	50
11	d 50s	40	25	e	50	50	35	e	22	b	b	b	b	b	b	22	e	55	42	d 50s	d 50s	d 50s	d 57s	d 57s
12	d 57s	d 50s	b	50	40	42	25	37	b	b	b	30	b	24	b	b	b	25	27	32	36	34	22	38
13	44	40	20	e	e	e	e	e	22	22	22	b	b	b	22	b	b	e	e	e	25	22	d 50s	45
14	d 50s	d 50s	b	d50s	22	e	25	22	b	b	c	c	c	c	c	c	c	c	c	c	c	c	e	c
15	e	c	45	33	26	32	22	25	b	b	b	b	b	b	b	25	b	49	34	28	d 50s	35	45	43
16	45	b	27	24	40	b	e	21	20	22	b	b	b	b	b	20	b	b	e	55	35	25	32	43
17	22	e	e	e	e	22	e	e	e	b	22	b	e	22	22	b	b	e	21	e	b	57	e	b
18	22	45	40	50	b	22	e	e	e	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	c	22	24	35	40	26	51	50	e	e	45	22	60	85	45
20	22	45	39	22	36	e	e	21	22	c	25	b	b	b	b	b	e	22	e	e	22	e	57	30
21	40	22	40	22	e	e	e	e	b	b	22	b	b	b	b	b	30	27	22	22	20	22	22	22
22	55	57	26	22	20	e	26	22	22	b	b	b	b	b	b	b	b	22	35	24	22	28	48	26
23	58	22	22	55	23	30	25	e	22	b	24	25	25	b	36	35	25	25	22	e	25	34	60	60
24	57	18	22	32	e	30	32	e	b	b	b	b	b	b	40	31	34	55	60	50	b	85	50	58
25	b	b	75	b	b	b	22	22	b	b	b	b	b	22	b	b	76	60	b	22	b	50	60	60
26	50	55	45	b	b	38	30	38	22	22	b	b	24	25	22	22	b	30	50	60	25	40	90	b
27	45	58	50	45	45	33	22	22	22	27	b	b	b	22	g	22	56	55	43	60	50	50	22	55
28	45	55	57	58	42	40	22	26	25	24	24	25	22	26	22	20	18	20	50	50	31	22	20	50
29	43	27	25	22	25	24	e	e	b	c	22	22	25	80	68	22	b	e	50	57	b	57	b	50
30	57	35	57	50	24	22	22	b	b	b	b	b	b	b	b	20	47	28	32	28	22	57	57	90
31																								
Median	45	40	27	29	25	22	22		22	d 22	24	25	25	24	22	22	23	22	25	28	25	38	45	43
No.	24	22	23	26	23	24	29	27	19	15	10	7	5	8	13	18	16	24	23	26	22	26	25	25

22b

Unit 0.1 Mc

HOURLY VALUES OF foF2 OBSERVED DURING JULY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	b	b	a	a	24	b	42	61	c	c	c	u 84c	88	91	73	61	21f	44f	53	45f	44f	39f
2	a	a	a	a	24f	19f	18f	18f	36	60	73	82	85	88	s	91	85	77	50	a	a	b	a	f	f
3	a	a	a	29f	31f	25f	c	c	c	c	c	92	95	s	100	99	87	49	a	a	b	a	a	a	a
4	a	29f	34f	29f	29f	27f	23f	21f	43	64	c	c	82	c	b	92	74	32f	39	f	f	32f	34f	29f
5	29f	28f	28f	c	27f	29f	26f	23f	45	60	66	79	81	76	c	c	c	c	c	39	19f	f	a	a
6	a	34f	f	c	c	33f	c	c	42	u 73b	c	c	91	101	s	s	s	s	46f	20f	f	f	f	f
7	f	f	f	f	f	f	27f	25f	51	c	c	77	u 89c	92	c	88	u 82j	s	59	u 53s	c	37	34	31
8	33	f	a	f	f	f	s	s	s	62	87	98	99	102	100	95	71	37	20f	54f	44f	54f	f	38f
9	22f	b	27f	f	f	18f	18f	19f	43	58	74	84	92	98	c	77	79	64	a	a	a	f	c	a
10	a	c	f	24f	23f	23f	21f	21f	41	54	57	66	76	82	88	84	c	c	c	47	39	37	a	29
11	31	28	27	26	21	21	20	24	47	61	72	82	96	95	72	61	66f	48f	39f	43f	f	35f	34f	41f
12	34f	30f	a	b	a	29f	u 25f	25f	47	72	87	100	c	c	c	c	u 79s	56f	42f	u 49f	41f	39f	c	39f
13	f	42f	41f	39f	42f	39f	36f	29f	49	77	75	93	97	90	97	u 88s	74	39f	a	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	b	64	75	b	u 88r	72	64	68f	39f	37f	45f	33f	28f	25f	23f
15	21f	21f	29f	33f	35f	36f	38f	36f	46	66	76	84	88	78	84	u 82s	70	u 72s	54	44	f	31f	43f	35f
16	35f	35f	41f	39f	35f	32f	35f	47f	50	69	83	91	85	101	92	u 95r	f	45	b	49f	47f	36f	35f	41f
17	37f	35f	29f	36f	29f	21f	24f	24f	48	73	78	88	d108s	100	94	u 98s	72	80	u 66s	56	49	28f	28f	44f
18	46f	f	39f	e	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	31f	28f	20	44f	27f	s	26f	26f	47	79	90	100	u108j	u105j	u108j	101	93	92	u 54s	f	51f	47f	f	49f
20	47f	43f	29f	24f	46f	42f	26f	34f	52f	65	90	100	101	108	105	90	87	52f	44f	43f	42f	45f	39f	46f
21	41f	b	b	34f	30f	34f	29f	b	45	62	90	103	98	s	s	95	100	u 87j	67	70	54	47	40	u 36j
22	29	a	37f	40f	42f	34f	u 32j	27f	49f	s	75	107	d 77c	d 77c	86	94	72	69f	67f	52f	47f	39	45f	29f
23	s	25f	s	26f	24f	24f	24f	25f	49	70	u 79r	79	c	c	c	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
28	a	a	a	a	a	24f	f	25f	44	54	62	66	72	73	b	72	b	69	49f	31	a	a	b	50f
29	a	c	c	c	c	c	c	c	c	c	c	c	c	c	74	75	68	54f	a	b	47f	45f	46f	37f
30	a	b	b	b	b	b	27f	26f	44	59	67	74	74	84	b	b	b	67	b	a	b	a	a	a
31	56f	54f	49f	47f	44f	45f	39	36	59	b	68	72	74	76	77	84	72	68	52	f	47f	46f	a	b
Median	34f	30f	29f	34f	30f	29f	26f	25f	46	63	75	84	90	90	88	88	74	56	48f	46f	47f	39f	37f	38f
No.	14	13	13	14	16	19	20	19	22	20	20	22	20	19	15	21	19	21	16	16	14	17	12	17

Unit 0.1 Mc.

23a

HOURLY VALUES OF (M3000)F2 OBSERVED DURING JULY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	b	b	a	a	31	b	32	33	c	c	c	u 32e	32	31	31	31	26	26	f	29	29	28
2	a	a	a	a	28	32	30	30	30	33	32	33	32	32	s	32	31	29	a	a	b	a	f	f
3	a	a	a	27	28	28	c	c	c	c	c	30	30	s	32	31	30	30	a	a	b	a	a	a
4	a	28	26	28	29	28	29	28	32	33	c	c	34	c	b	32	31	28	27	f	f	27	28	27
5	28	27	28	c	29	28	29	30	33	33	33	32	30	32	c	c	c	c	c	28	26	f	a	c
6	a	26	f	c	c	28	c	c	28	u 33b	c	c	32	32	s	s	s	s	29	29	f	f	f	f
7	f	f	f	f	f	f	30	30	30	c	c	33	u 33c	32	c	31	s	s	32	u 31s	c	29	31	29
8	27	f	a	f	f	f	s	s	s	34	32	34	32	31	31	31	31	28	28	27	f	f	f	27
9	28	b	27	f	f	30	29	28	31	31	32	31	31	29	c	31	31	29	a	a	a	f	c	a
10	a	c	f	27	28	29	28	28	31	31	31	31	30	33	33	33	c	c	c	30	38	28	a	25
11	27	28	28	29	28	28	29	28	30	32	31	31	31	29	28	30	30f	27f	26f	28f	f	26f	26f	f
12	27f	28f	a	a	a	28f	f	29f	31	30	33	31	c	c	c	c	u 30s	28f	26f	f	27f	28f	c	f
13	f	26	28	28	u 26f	29	28	29	32	32	32	33	30	29	29	u 29s	30	27	a	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	b	28	28	b	u 28r	32	29	29	28	27	29	27	29	27	28
15	27f	27f	27f	26f	27f	29f	29f	29f	31	30	32	30	31	32	31	u 32s	31	u 30s	31	29	f	27f	27f	27f
16	27f	26f	28f	27f	27f	29f	30f	27	32	32	32	32	30	31	32	u 31r	f	29	b	28	30	29	28	28
17	28	29	28	28	29	f	30	f	32	33	31	31	s	33	31	u 32s	31	31	u 31s	31	30	29	27	28
18	f	f	28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	27	28	28	28	29	s	29	29	32	33	31	31	u 32j	u 32j	u 33j	31	32	31	u 32s	f	29	29	f	29
20	28f	f	27f	f	f	f	28f	28f	33	33	34	32	31	32	31	32	31	30	27	31f	28f	28f	27f	29f
21	27	b	b	26	28	28	28	b	31	31	33	31	31	s	s	31	31	u 30j	30	30	30	31	31	u 28j
22	29	a	27	27	28	30	u 30j	27	32	s	33	34	c	c	31	33	32	31	29	30f	29	29	29	26f
23	s	29	s	29	29f	30f	31f	30	33	33	u 33r	32	c	c	c	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
28	a	a	a	a	a	29	f	29	34	34	31	30	32	30	b	32	b	31	29	28	a	a	b	28
29	a	c	c	c	c	c	c	c	c	c	c	c	c	c	31	31	30	28	a	b	26	28	29	28
30	a	b	b	b	b	b	31	30	34	33	31	32	29	31	b	b	b	29	b	a	b	a	a	a
31	28	28	29	28	28	f	28	31	34	b	32	31	33	31	31	33	31	31	28	f	f	31f	a	b
Median	27	28	28	28	28	29	29	29	32	33	32	31	31	32	31	31	31	29	28	29	29	29	28	28
No.	13	12	13	13	15	16	19	18	22	20	20	22	19	19	15	21	18	21	16	15	11	16	12	15

Unit 0.1

23b

HOURLY VALUES OF h'F OBSERVED DURING JULY 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	b	b	a	a	300	b	260	240	c	c	c	250	240	240	240	250	a	300	300	250	250	290
2	a	a	a	a	a	280	a	b	250	240	250	250	250	250	230	240	230	250	a	a	b	a	300	a
3	a	a	a	350	300	a	c	c	c	c	c	230	230	250	240	250	250	290	a	a	b	a	a	a
4	a	330	320	330	290	300	280	b	250	250	c	c	230	c	b	230	250	330	330	a	a	300	290	290
5	290	300	290	c	300	280	270	b	240	230	240	c	250	240	c	c	c	c	c	260	300	260	a	a
6	a	350	290	c	c	290	c	c	c	220	c	c	250	230	270	240	240	250	260	300	260	250	250	250
7	250	290	290	280	270	280	270	250	250	230	e	220	240	240	220	240	240	240	240	250	c	250	250	280
8	280	290	a	f	300	270	s	s	240	230	240	250	250	250	250	250	250	280	330	280	250	290	270	290
9	300	b	300	290	280	b	b	b	250	250	240	250	260	250	230	280	260	290	a	a	a	330	290	a
10	a	350	340	340	b	300	b	b	260	250	250	240	220	250	240	230	c	c	c	250	250	270	a	300
11	300	300	280	300	290	300	b	b	280	350	250	250	250	240	290	260	240	250	300	250	250	340	310	300
12	a	360	a	b	a	a	280	290	230	250	220	260	c	c	c	c	250	300	350	270	280	280	270	290
13	f	340	310	290	270	270	260	250	240	240	230	250	250	250	250	240	240	300	a	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	b	b	b	250	300	250	b	270	300	330	290	300	280	240	a
15	a	a	350	400	330	290	270	270	250	250	250	250	250	250	250	250	230	230	230	250	250	330	300	310
16	330	a	310	290	280	250	260	300	260	240	250	250	230	250	250	250	250	280	b	280	260	250	280	270
17	280	290	300	300	300	280	260	260	250	240	250	240	250	230	250	250	230	240	240	240	250	300	300	250
18	280	280	290	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	290	300	300	300	280	s	250	270	230	240	240	230	240	230	250	230	240	240	240	250	280	270	280	280
20	280	280	320	280	a	280	260	250	240	230	240	240	250	240	240	240	240	260	300	270	310	260	a	a
21	a	b	b	340	300	290	300	b	250	240	240	240	240	230	240	230	240	220	230	240	250	240	250	280
22	300	a	a	290	270	260	250	240	240	230	230	230	250	250	240	230	240	230	250	250	250	250	270	300
23	300	290	290	280	280	260	260	250	240	240	240	240	c	c	c	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
28	a	a	a	a	a	300	a	300	250	250	270	250	260	b	b	b	b	250	260	a	a	a	b	a
29	b	b	b	b	b	b	b	b	b	b	b	b	b	b	270	270	260	270	a	b	a	a	a	a
30	a	b	b	b	b	b	290	300	240	250	250	250	250	280	b	b	b	b	b	a	b	b	a	a
31	350	320	300	300	300	300	300	250	240	b	260	270	250	250	270	250	250	250	290	300	270	260	a	b
Median	290	300	300	300	290	280	270	260	250	240	240	250	250	250	250	240	240	250	260	260	260	270	275	290
No.	13	15	16	16	16	18	16	13	22	22	19	20	22	21	20	20	21	22	15	17	16	19	16	14

24a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING JULY 1956 AT MACQUARIE ISLAND

Sweep : 1.0- 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	b	b	a	a	310	b	290	280	c	c	c	280	300	300	300	300	350	350	350	280	300	330
2	a	a	a	a	350	300	300	290	300	280	280	270	280	300	250	280	300	320	a	a	b	a	f	f
3	a	a	a	370	340	320	c	c	c	c	c	300	300	s	300	300	310	380	a	a	b	a	a	a
4	a	350	350	350	340	340	290	300	300	280	c	c	250	c	b	280	280	370	370	f	f	330	330	340
5	330	330	330	c	330	320	300	290	290	280	250	c	300	250	c	c	c	c	c	350	350	f	a	a
6	a	370	f	c	c	330	c	c	c	250	c	c	280	270	s	s	s	s	300	350	f	f	f	f
7	f	f	f	f	f	f	300	300	300	c	c	250	300	300	c	300	300	s	290	330	c	310	340	350
8	350	350	a	f	f	f	s	s	s	260	270	280	300	300	300	330	300	380	380	320	290	330	f	350
9	330	b	350	f	f	300	300	300	300	280	300	280	300	300	c	300	330	350	a	a	a	f	c	a
10	a	c	f	f	350	330	310	300	300	280	300	300	330	230	280	270	c	c	c	320	330	350	a	370
11	360	360	350	350	350	350	330	350	330	300	300	300	300	340	300	300	270	300	360	300	f	390	400	340
12	a	380	a	b	a	a	310	320	300	310	360	320	c	c	c	c	330	360	390	310	340	340	c	340
13	f	390	340	340	330	340	340	310	290	290	290	290	300	300	310	300	290	330	a	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	b	340	370	b	330	280	380	310	310	360	360	340	360	350	370
15	370	380	400	430	350	360	320	290	320	280	300	290	300	300	340	330	300	300	340	350	340	360	370	350
16	370	410	350	300	310	280	300	350	300	290	300	300	300	300	280	300	f	350	b	340	330	300	320	330
17	350	350	350	320	310	300	300	300	300	260	270	300	s	280	340	300	280	320	270	310	320	360	330	350
18	340	f	350	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	380	350	360	350	300	s	270	300	300	260	300	300	300	300	300	280	290	310	260	f	320	350	f	360
20	320	400	390	320	350	330	350	310	260	250	300	300	300	280	290	280	300	310	340	310	330	340	390	360
21	370	b	b	380	340	350	340	b	290	290	280	290	300	s	s	300	310	300	310	310	330	330	320	350
22	360	a	370	350	340	310	330	300	280	s	250	250	c	c	260	290	280	280	290	300	340	340	340	330
23	s	340	s	350	350	340	300	300	270	270	270	270	c	c	c	c	c	c	c	c	c	c	c	c
24	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
28	a	a	a	a	a	340	f	330	280	280	290	320	300	320	b	280	b	300	360	290	a	a	b	350
29	a	c	c	c	c	c	c	c	c	c	c	c	c	c	300	300	300	290	a	b	360	350	310	350
30	a	b	b	b	b	b	310	330	270	280	280	280	310	310	b	b	b	330	b	a	b	b	a	a
31	400	350	340	350	350	360	360	300	260	b	300	300	280	300	300	290	300	330	370	f	300	300	a	b
Median	360	355	350	350	340	330	310	300	300	280	290	300	300	300	300	300	300	320	345	320	330	340	335	350
No.	13	14	13	13	16	18	20	19	21	20	20	21	19	19	16	21	19	21	16	16	15	17	12	17

24b

Unit 1 km

HOURLY VALUES OF foE OBSERVED DURING JULY 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									b	u185b	c	c	c	a	220	190	b							
2									a	200	a	c	a	a	a	a	a							
3									c	c	c	c	a	a	a	a	b							
4									b	195	c	c	a	c	b	190	b							
5									b	a	a	b	b	b	c	c	c							
6									a	c	c	c	r	b	b	b	b							
7									b	u200f	c	a	a	a	a	a	a							
8									a	220	b	a	a	a	a	200	b							
9									b	a	a	b	b	b	b	b	a							
10									a	u200f	210	a	a	a	a	200f	c							
11									b	b	a	b	b	b	a	a	b							
12									a	a	b	b	c	c	c	c	b							
13									b	205	c	b	b	b	a	f	a							
14									c	b	b	b	b	b	b	b	e							
15									a	b	b	b	b	b	b	b	180f							
16									a	a	b	b	b	b	b	b	b							
17									a	b	b	b	b	b	b	b	e							
18									c	c	c	c	c	c	c	c	c							
19									a	u220r	b	b	b	b	b	b	a							
20									u175f	a	b	b	b	b	b	b	a							
21									b	u220r	a	a	a	a	a	u205r	165							
22									165f	215	u230r	a	b	b	a	a	b							
23									175f	a	a	a	c	c	c	c	c							
24									c	c	c	c	c	c	c	c	c							
25									c	c	c	c	e	c	c	c	c							
26									e	c	c	c	c	c	c	c	c							
27									c	c	c	c	c	c	c	c	c							
28									175	a	b	b	b	b	b	b	b							
29									c	c	c	c	e	e	b	b	a							
30									a	a	b	b	b	b	b	b	b							
31									180f	b	b	b	b	b	b	b	a							
Median									175f	200	-	-	-	-	-	200	-							
No.									5	10	2	0	0	0	1	5	4							

25a

Unit 0.01 Mc

HOURLY VALUES OF fEs OBSERVED DURING JULY 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	b	b	36	40	22	b	b	22	e	e	e	24	22	20	b	b	24	22	22	25	25	25
2	35	53	60	40	e	e	e	e	22	22	29	e	22	25	22	22	22	22	65	50	b	40	30	32
3	d130	67	63	30	22	22	e	e	e	e	e	e	22	24	22	22	b	22	50	45	b	45	40	45
4	50	25	22	22	e	e	e	e	b	b/	e	e	30	e	b	b	b	22	25	35	22	e	e	e
5	40	25	21	e	e	e	e	e	b	23	25	b	b	b	e	e	e	e	e	e	e	e	45	e
6	45	25	e	e	e	36	e	e	26	b	e	e	b	b	b	b	b	e	e	22	e	35	30	22
7	e	e	40	22	22	19	22	e	b	22	e	26	28	24	22	22	22	22	e	e	e	e	e	e
8	e	e	45	22	43	e	s	s	27	b	b	38	22	70	22	b	b	b	22	26	22	22	22	e
9	30	b	e	e	e	e	22	e	b	22	24	b	b	b	b	b	22	26	48	60	57	30	25	57
10	40	22	22	22	22	28	e	e	25	25	22	25	29	22	22	22	e	e	e	e	e	e	22	e
11	e	e	e	e	e	e	e	e	b	b	22	b	b	b	24	22	e	e	22	22	67	30	22	35
12	45	35	43	22	40	24	e	e	21	22	b	b	e	e	e	e	b	e	22	u 21	24	40	e	22
13	22	36	25	e	e	e	e	e	b	22	e	b	b	b	22	22	22	e	27	e	e	e	e	e
14	e	e	e	e	e	e	e	e	e	b	b	b	b	b	b	b	e	26	22	22	40	22	20	22
15	22	22	20	50	41	22	22	22	25	b	b	b	b	b	30	b	e	e	20	19	38	22	22	36
16	45	38	30	22	32	31	26	40	45	22	b	27	b	26	22	b	e	e	b	e	27	40	20	22
17	38	22	e	26	30	22	22	22	22	b	b	b	b	b	b	b	e	e	e	20	19	22	19	22
18	25	e	22	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e
19	22	30	22	e	e	19	22	27	21	19	b	b	b	b	b	b	22	20	22	e	e	e	22	32
20	22	25	22	20	22	22	e	e	e	22	b	b	b	b	b	b	22	26	26	22	50	38	48	48
21	45	b	22	30	22	e	e	b	e	22	28	29	30	28	22	e	e	e	20	e	e	22	e	e
22	48	40	30	22	19	e	e	e	22	e	29	22	b	b	22	22	e	e	e	19	e	e	e	e
23	22	19	e	29	19	e	e	19	20	20	26	25	e	e	e	e	e	e	e	e	e	e	e	e
24	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e
25	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e
26	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e
27	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e
28	22	42	30	40	30	19	22	19	19	20	b	b	b	b	b	b	b	b	b	27	22	31	b	57
29	57	e	e	e	e	e	e	e	e	e	e	e	e	e	b	b	20	22	40	b	22	22	22	30
30	40	b	22	b	b	b	e	22	22	26	b	b	b	b	b	b	b	b	b	42	b	38	30	42
31	32	30	30	25	28	22	30	e	e	b	b	b	b	b	b	b	22	e	e	22	19	e	50	b
Median	35	25	22	22	22	19			22	22	26	26	28	24	22	22	20		22	22	22	22	22	24
No.	25	21	24	20	22	23	21	19	16	16	8	7	7	8	12	9	15	19	20	22	21	24	22	22

25b

Unit 0.1 Mc

HOURLY VALUES OF foF2 OBSERVED DURING AUGUST 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	c	a	a	b	b	a	21f	32s	55	71	78	u 82c	u 83c	d 77c	d 77c	80c	d 77c	u 84c	64f	54f	f	s	a	33f
2	57f	39f	37f	49f	37	s	39f	37f	56f	68	75	d 77c	u 84c	79c	d 77c	d 77c	d 77c	79f	68f	55f	23f	50f	a	a
3	a	f	f	f	54f	56f	47f	49f	57	69	76	u 83c	d 77c	d 77c	81c	d 77c	75	74	62	f	52f	49f	49f	s
4	a	b	a	37f	39f	s	31f	35	59	67	78	u 84c	d 77c	d 77c	d 77c	u 84c	80c	74	72	55f	55f	41f	37f	34f
5	31	29	27f	f	u 34f	45f	45f	46f	56	68	76	u 84c	d 77c	d 77c	d 77c	u 82c	d 77c	68	66	59f	54f	s	f	c
6	26f	25f	f	21f	21f	21f	19f	46f	62	77	74	81c	76	79c	b	79c	u 82c	77	69	61	54	50	45	44
7	40	u 34j	u 31j	30	30	30	28	39	63	u 83c	u 84c	d 77c	d 77c	d 77c	s	u 84c	d 77c	d 77c	72	62	55f	46f	41	s
8	u 32j	29f	29f	c	27f	u 24f	25f	c	u 66j	76	d 77c	d 77c	u 84c	u 83c	d 77c	d 77c	92	79	53f	52f	a	s	49f	54f
9	52f	52f	s	a	a	b	a	b	b	68	76	79c	d 77c	d 77c	c	c	c	c	c	c	c	c	c	c
10	c	a	a	a	a	b	b	48f	55	66	71	77	79	81	80	79	b	56	u 57s	36f	36f	f	28f	24f
11	21s	22f	20f	20f	20f	20f	20f	u 37j	60	69	75	74	74	81c	u 82c	u 84c	u 82c	f	a	a	s	59f	f	a
12	b	b	a	b	b	b	b	b	b	b	b	69	69	72	u 82c	80c	81c	a	a	a	b	a	b	b
13	b	b	b	b	b	b	b	b	b	66	69	77	d 77c	d 77c	d 77c	d 77c	d 77c	u 84c	d 77c	76	68	58	51	a
14	a	37	39	b	37	34	31	43	61	69	d 77c	d 77c	u 84c	b	b	d 77c	d 77c	94	84	73	63	57	b	u 43j
15	b	a	28	29	s	32	29	b	60	72	77	u 81c	d 77c	u 84c	d 77c	d 77c	d 77c	u 84c	75	68	61	48f	u 46j	b
16	38	34f	32	30	28	25	24	b	59	71	81c	d 77c	d 77c	u 84c	d 77c	d 77c	d 77c	u 84c	b	66	59	52	49	39
17	46f	u 45j	u 41j	b	a	41	36	49	63	73	d 77c	91	84	104	d 77c	d 77c	b	55	58f	f	52	b	b	a
18	b	b	b	49f	42	37f	c	44	59	66	76	79c	74	81c	81c	u 83c	74	79c	69	59	51	44	46f	49f
19	37f	23f	22f	24f	25f	26f	26f	u 45j	71	79c	d 77c	81c	d 77c	d 77c	d 77c	d 77c	d 77c	u 84c	72	69	62	52f	53f	49f
20	49f	44	u 41j	37	c	c	c	c	c	d 77c	d 77c	d 77c	d 77c	101	d 77c	d 77c	d 77c	88	77	66	59	54	50	47
21	42	46	30f	29	c	26	26	52	79	94	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	b	88	79	56f	56f	56f	a	56f
22	a	a	a	a	49f	b	b	51	61	67	69	77	79	78	79	d 77c	82	88	80	74	65	65	54	48
23	38	39	c	31	c	26	27	b	69	87	87	d 77c	b	d 77c	d 77c	d 77c	66	60f	52f	a	b	a	b	b
24	b	b	b	a	b	b	b	b	54	56	b	68	b	d 77c	65	b	59f	a	a	a	a	b	b	a
25	b	60f	b	b	b	a	b	51	b	54	58	b	b	69	72	74	60f	57f	52f	49f	a	a	b	a
26	b	b	b	b	b	59f	b	b	b	67	69	72	67	f	63	57	d 77c	58f	a	a	b	b	49	a
27	f	a	b	b	b	b	b	51	b	67	68	78	81	86	d 77c	d 77c	84	f	52f	54f	61	f	a	a
28	b	a	a	54f	49f	a	49f	54f	68	74	79c	u 84c	b	d 77c	d 77c	u 82c	d 77c	74	68f	59f	53f	f	f	54f
29	55f	b	c	c	c	c	c	c	c	c	c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	79c	60f	56f	57f	56f	60f
30	f	b	b	f	49f	51f	54f	62	76	83	d 77c	d 77c	d 77c	b	d 77c	d 77c	d 77c	90	b	52f	67f	59f	b	59f
31	f	f	b	b	b	b	47f	59	79	d 77c	d 77c	d 77c	d 77c	u 84c	d 77c	d 77c	d 77c	86	83	59	53f	b	b	f
Median	39	37	30	30	37f	31f	29f	47	61	69	d 77	d 77	d 77	d 77	d 77	d 77	d 77	79	69	59f	56	52f	49	48f
No.	14	15	12	13	15	16	19	20	23	29	28	30	27	28	27	29	27	24	24	23	22	17	15	15

26a

Unit 0.1 Mc.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING AUGUST 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	c	a	a	b	b	a	30	31	31	32	33	u 32c	u 33c	c	c	32c	c	30	f	27	f	s	a	28
2	27	26	27	28	29	s	32	30	32	32	32	c	u 31c	33c	c	c	c	30	30	29	27	27	a	a
3	a	f	f	f	29f	28f	31f	30	32	32	32	u 32c	c	c	32c	c	31	31	27	f	29f	29f	27	s
4	a	b	a	29	f	s	29	30	32	31	32	u 32c	c	c	c	u 32c	32c	31	30	30	31f	29f	28f	29
5	28	29	28	f	u 28f	28f	29	30	32	32	31	u 33c	c	c	c	u 32c	c	30	29	f	30	s	f	c
6	27f	28f	f	27f	30f	f	29	29	33	33	31	34c	33	34c	b	33c	u 34c	31	31	30	30	30	30	29
7	30	u 29j	c	29	30	30	29	30	22	u 33c	u 33c	c	c	c	s	u 33c	c	c	30	29	29	30	30	s
8	u 29j	30	28	c	29	u 30f	29	c	u 32j	33	c	c	u 33c	u 34c	c	c	32	31	29	29	a	s	27	28
9	29	27	s	a	a	b	a	b	b	32	30	32c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	a	a	a	a	b	b	30	31	31	29	29	32	31	29	31	b	28	u 29s	27	28f	f	28f	29
11	28f	27f	27f	27f	28f	28f	28f	u 30j	32	32	32	30	29	31c	u 31c	u 30c	u 31c	f	a	a	s	28	f	a
12	b	b	a	b	b	b	b	b	b	b	b	30	28	29	u 30c	30c	30c	a	a	a	b	a	b	b
13	b	b	b	b	b	b	b	b	b	32	32	34	c	c	c	c	c	u 32c	c	30	30	29	30	a
14	a	27	28	b	27	28	29	31	31	34	c	c	u 32c	b	b	c	c	30	30	28	30	28	b	u 30j
15	b	a	27	28	s	29	29	b	32	31	32	u 32c	c	u 32c	c	c	c	u 31c	29	31	30	30	c	b
16	28	28	28	29	29	29	28	b	30	33	32c	c	c	u 32c	c	c	c	u 33c	b	30	29	28	28	26
17	28	u 28j	u 30j	b	a	30	28	30	31	31	c	31	33	31	c	c	b	26	26	f	27	b	b	a
18	b	b	b	28	30	28	c	31	32	31	29	32c	29	32c	31c	u 32c	31	32	29	29	28	29	29	29
19	28	28	29	29	29	28	28	u 32j	21	33c	c	31c	c	c	c	c	c	u 30c	30	30	30	30	28	30
20	29	30	u 31j	29	c	c	c	c	c	c	c	c	c	31	c	c	c	31	31	30	29	29	30	29
21	29	29	29	29	c	30	30	31	32	31	c	c	c	c	c	c	b	31	30	27	26	26	a	26
22	a	a	a	a	28	b	b	30	30	29	28	28	31	29	30	c	30	29	29	27	29	29	28	28
23	28	27	c	28	c	27	28	b	32	32	31	c	c	c	c	c	30	30	28	a	b	a	b	b
24	b	b	b	a	b	b	b	b	30	29	b	27	b	c	27	b	27	a	a	a	b	b	b	a
25	b	27	b	b	b	a	b	28	b	28	26	b	b	27	28	28	29	29	26f	26	a	a	b	a
26	b	b	b	b	b	28	b	b	b	29	29	27	26	f	31	29	c	27	a	a	b	b	26	a
27	f	a	b	b	b	b	b	31	b	29	31	29	31	30	c	c	30	f	f	28	27	f	a	a
28	b	a	a	f	f	a	28	30	31	29	31c	u 31c	b	c	c	u 30c	c	29	29	27	28f	f	f	27f
29	27f	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	30c	28	26f	27f	27f	26
30	f	b	b	f	f	27	f	30	32	32	c	c	c	b	c	c	c	31	b	26	26f	26	b	28
31	f	f	b	b	b	b	28	31	32	c	c	c	c	u 32c	c	c	c	32	30	28	27	b	b	f
Median	28	28	28	28	29	28	29	30	32	32	31	31	31	31	30	32	30	30	29	28	29	29	28	28
No.	14	15	11	12	12	15	18	20	23	27	20	19	13	15	9	12	12	24	21	22	22	17	14	15

26b

Unit 0.1

HOURLY VALUES OF h'F OBSERVED DURING AUGUST 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	c	a	a	b	b	a	250	250	240	250	250	250	270	250	270	b	240	260	260	250	300	350	a	350
2	320	350	300	300	300	a	300	260	240	250	250	250	250	250	260	250	240	230	250	250	340	330	a	a
3	a	300	280	280	270	260	250	250	250	240	250	270	250	270	250	250	240	230	270	300	270	260	280	300
4	a	b	300	290	250	250	240	250	230	240	250	250	250	240	250	250	250	230	240	250	250	250	270	280
5	290	a	300	290	270	260	260	250	250	240	250	280	270	250	250	230	250	250	250	250	280	280	310	380
6	330	330	310	300	280	280	270	250	230	240	240	250	230	250	280	230	240	230	240	250	250	250	250	270
7	260	260	260	280	250	260	260	260	250	250	250	260	250	250	250	240	240	240	240	240	260	250	270	280
8	280	280	300	280	270	280	b	280	250	280	240	240	240	240	250	250	240	230	300	290	a	260	300	290
9	270	280	a	a	a	b	a	b	b	270	b	b	270	270	c	c	c	c	c	c	c	c	c	c
10	c	a	a	a	a	b	b	b	b	b	260	b	270	260	b	270	b	270	300	300	300	310	290	290
11	a	a	b	b	b	b	b	270	250	250	250	250	300	260	270	260	250	a	a	a	a	a	a	a
12	b	b	a	b	b	b	b	b	b	b	b	b	b	330	300	300	300	a	a	a	b	a	b	b
13	b	b	b	b	b	b	b	b	b	250	250	260	270	260	250	250	250	240	250	250	250	260	300	a
14	a	a	a	b	300	a	280	260	b	b	270	260	260	b	b	240	240	250	240	b	b	b	b	280
15	b	a	a	300	290	270	270	b	250	260	250	250	250	250	260	250	250	260	250	250	250	270	280	b
16	300	290	290	290	270	270	b	b	b	b	b	270	260	b	240	240	250	250	b	240	250	270	280	310
17	330	a	a	b	a	250	250	250	250	250	280	240	250	240	250	250	b	a	340	a	a	b	b	a
18	b	b	b	b	300	280	c	270	b	b	280	280	300	260	b	250	250	240	240	250	300	300	280	270
19	280	310	a	b	300	350	250	250	b	b	280	250	240	250	240	250	250	240	260	230	250	260	260	260
20	270	270	260	260	c	c	c	c	c	250	240	260	260	250	250	250	250	230	230	230	250	250	280	270
21	260	270	270	280	280	270	270	250	240	240	250	260	250	240	250	250	250	240	240	290	310	280	a	330
22	a	a	a	a	330	b	b	270	270	b	b	b	b	b	b	250	250	250	250	270	280	280	280	300
23	300	300	300	300	300	b	b	b	250	270	260	270	260	270	250	250	290	250	270	a	b	a	b	b
24	b	b	b	a	b	b	b	b	b	b	b	b	b	300	370	b	b	a	a	a	a	b	b	a
25	b	a	b	b	b	a	b	330	b	b	b	b	b	b	b	b	b	a	a	a	a	a	b	a
26	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	250	310	a	a	b	b	a	a
27	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	270	260	b	310	310	a	a	a	a
28	b	a	a	330	300	a	280	260	250	b	b	270	b	260	300	250	250	270	250	270	260	a	a	300
29	300	b	c	c	c	c	c	c	c	c	c	b	b	b	260	280	250	250	250	270	270	260	320	a
30	a	b	b	f	290	250	280	260	250	250	270	270	260	250	b	260	250	250	b	a	b	b	b	f
31	b	b	b	b	b	b	260	250	250	b	260	260	250	260	260	260	260	240	240	290	a	b	b	f
Median	290	290	300	290	290	270	260	260	250	250	250	260	260	250	250	250	250	245	250	250	265	265	280	290
No.	13	11	11	13	17	13	15	19	17	17	21	22	23	24	22	26	26	24	23	21	18	18	15	16

27a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING AUGUST 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	c	a	a	b	b	a	270	310	280	290	270	290	310	c	c	300	c	300	300	350	f	s	a	400
2	400	380	340	360	350	s	330	320	280	290	290	c	290	280	c	c	c	300	340	340	450	400	a	a
3	a	f	f	f	350	340	300	330	290	300	300	310	c	c	300	c	290	300	320	360	f	330	320	250	s
4	a	b	a	330	330	s	340	330	280	300	290	280	c	c	c	c	300	300	300	310	310	310	320	350	350
5	350	350	340	f	350	350	350	300	300	280	300	c	c	c	c	310	c	300	330	300	350	s	f	c
6	f	f	f	f	f	300	280	330	270	260	300	300	280	280	b	300	300	330	330	320	330	330	340	350
7	290	350	340	350	340	330	340	320	290	270	280	c	c	c	s	270	c	c	330	330	340	350	350	s
8	330	330	340	c	310	330	350	c	270	310	c	c	c	260	c	c	310	330	350	350	a	s	380	350
9	310	320	s	a	a	b	a	b	b	300	320	330	c	c	c	c	c	c	c	c	c	c	c	c
10	c	a	a	a	a	b	b	330	340	330	350	320	300	310	350	300	b	340	380	380	370	f	330	350
11	330	370	390	330	330	320	320	330	290	280	300	310	360	300	320	340	300	f	a	a	s	350	f	a
12	b	b	a	b	b	b	b	b	b	b	b	350	400	350	340	330	340	a	a	a	b	a	b	b
13	b	b	b	b	b	b	b	b	b	300	290	c	c	c	c	c	c	c	c	330	330	330	340	a
14	a	400	400	b	380	360	340	320	300	270	c	c	310	b	b	c	c	350	340	340	330	350	b	350
15	b	a	400	370	s	350	350	b	300	300	300	300	c	300	c	c	c	330	330	340	330	350	360	b
16	390	370	370	350	350	350	370	b	300	280	290	c	c	300	c	c	c	300	b	330	350	350	370	390
17	390	400	400	b	a	330	300	300	300	300	c	310	280	310	c	c	b	a	380	f	400	b	b	a
18	b	b	b	380	350	350	c	320	280	310	360	300	340	300	320	290	300	320	350	340	370	350	360	350
19	370	350	350	350	350	330	330	300	270	280	c	310	c	c	c	c	c	320	350	350	350	350	370	350
20	350	350	340	350	c	c	c	c	c	c	c	c	c	330	c	c	c	320	310	320	340	350	350	350
21	350	340	320	350	c	320	340	300	260	290	c	c	c	c	c	c	b	310	330	400	410	250	a	380
22	a	a	a	a	380	b	b	340	330	330	310	350	350	330	330	c	330	330	360	370	370	370	370	360
23	360	380	c	390	c	370	370	b	280	300	300	c	c	c	c	c	330	310	320	a	b	a	b	b
24	b	b	b	a	b	b	b	b	b	350	b	400	b	c	380	b	b	a	a	a	a	b	b	a
25	b	400	b	b	b	a	b	370	b	350	430	b	b	370	360	350	350	330	460	450	a	a	b	a
26	b	b	b	b	b	380	b	b	b	330	350	390	470	f	300	350	c	350	a	a	b	b	a	a
27	f	a	b	b	b	b	b	b	b	340	320	340	350	330	c	c	340	f	370	340	370	f	a	a
28	b	a	a	370	370	a	350	330	300	340	300	300	b	c	c	300	c	340	340	340	370	f	f	370
29	360	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	330	350	400	330	390	400
30	f	b	b	f	350	390	350	310	290	300	c	c	c	b	c	c	c	c	b	f	400	420	b	f
31	f	f	b	b	b	b	350	300	300	c	c	c	c	c	c	c	c	c	300	380	400	b	b	f
Median	350	360	345	350	350	345	340	320	290	300	300	310	325	305	u330	300	310	320	340	340	360	350	355	350
No.	13	14	12	12	14	16	19	19	22	27	20	17	12	14	9	12	11	20	23	22	22	17	14	14

27b

Unit 1 km

HOURLY VALUES OF foE OBSERVED DURING AUGUST 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									180	b	b	b	b	b	b	b	180							
2									185	u230r	a	a	a	b	a	r	185							
3									180	u215r	b	b	b	b	b	b	190f							
4									190f	r	a	a	b	a	a	a	195							
5									190	r	a	b	b	b	b	a	195							
6									190	u240r	c	b	b	b	b	b	u200f							
7									a	b	b	b	b	b	b	a	u195r							
8									a	a	b	b	b	b	b	b	b							
9									b	b	b	b	b	b	c	c	c							
10									b	b	b	b	b	b	b	b	b							
11									u185r	b	b	b	b	b	b	b	f							
12									b	b	b	b	b	b	b	b	b							
13									b	b	b	b	b	b	b	b	b							
14									b	b	b	b	b	b	b	b	200f							
15									b	b	b	b	b	b	b	b	b							
16									b	b	b	b	b	b	b	b	b							
17									205	a	a	b	b	b	b	b	b							
18									b	b	b	b	b	b	b	b	a							
19								160	b	b	b	b	b	b	b	b	b							
20								c	c	a	b	b	b	b	b	b	b	160						
21								165	215	a	b	b	b	b	b	b	b	u165r						
22								170f	u225r	b	b	b	b	b	b	b	b	c						
23								b	b	b	b	b	b	b	b	b	a	u180b						
24								b	b	b	b	b	b	b	b	b	b	a						
25								b	b	b	b	b	b	b	b	b	b	a						
26								b	b	b	b	b	b	b	b	b	b	a						
27								b	b	b	b	b	b	b	b	b	b	b						
28								e195b	b	b	b	b	b	b	b	b	b	b						
29								c	c	c	c	b	b	b	b	b	b	b						
30								b	b	b	b	b	b	b	b	b	b	b						
31								200	b	b	b	b	b	b	b	b	b	b						
Median								170	190	-	-	-	-	-	-	-	195	-						
No.								5	10	3	0	0	0	0	0	0	8	3						

28a

Unit 0.01 Mc.

HOURLY VALUES OF fEs OBSERVED DURING AUGUST 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	e	55	70	b	b	22	e	e	b	b	b	b	b	b	b	b	e	21	e	22	b	28	27	22
2	31	40	25	22	19	22	29	25	e	22	22	28	22	b	22	22	e	22	e	e	e	27	40	55
3	36	21	e	e	19	e	e	e	e	e	b	b	b	b	b	b	e	e	e	e	22	19	25	s
4	58	b	31	e	e	e	e	e	e	e	26	29	b	22	22	24	19	e	e	e	e	22	e	e
5	e	67	27	22	20	e	e	e	20	22	22	b	b	b	b	22	e	e	e	e	e	s	20	e
6	e	e	e	e	e	e	e	e	e	20	22	b	b	b	b	b	g	22	e	e	e	e	e	e
7	e	e	e	e	e	e	e	e	22	b	b	b	b	b	b	21	19	e	21	22	22	e	40	70
8	e	e	e	e	e	e	e	22	22	29	b	b	b	b	b	b	b	e	28	22	60	22	e	38
9	70	e	38	66	50	b	30	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c
10	c	48	60	65	67	b	b	b	b	b	b	b	b	b	b	b	b	e	20	20	19	22	19	20
11	20	21	19	18	e	e	e	e	20	b	b	b	b	b	b	b	e	30	65	60	22	75	40	75
12	b	b	60	b	b	b	b	b	b	b	b	b	b	b	b	b	b	50	60	55	b	30	b	b
13	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e	e	20	e	e	47
14	22	26	22	b	19	22	e	e	b	b	b	b	b	b	b	b	e	e	e	b	b	b	b	e
15	b	35	35	25	e	e	e	b	b	b	b	b	b	b	b	b	b	b	b	e	e	e	e	b
16	e	e	e	e	e	e	e	b	b	b	b	b	b	b	b	b	b	b	b	e	e	e	e	22
17	22	35	35	b	25	e	e	e	e	22	22	b	b	b	b	b	b	60	30	38	22	b	b	75
18	b	b	b	22	25	e	19	e	b	b	b	b	b	b	b	b	22	19	e	e	20	28	22	e
19	e	28	32	e	e	e	e	e	b	b	b	b	b	b	b	b	b	e	e	e	e	e	e	e
20	e	e	e	e	c	c	c	c	c	22	b	b	b	b	b	b	b	e	e	e	e	e	45	e
21	e	e	16	e	e	e	e	e	e	22	b	b	b	b	b	b	b	e	e	30	25	22	40	40
22	25	70	62	67	32	b	b	e	e	b	b	b	b	b	b	b	b	e	e	e	e	e	22	20
23	e	e	e	e	e	e	e	b	b	b	b	b	b	b	b	b	22	20	22	38	b	30	b	b
24	b	b	b	60	b	b	b	b	b	b	b	b	b	b	b	b	b	20	22	22	b	b	b	60
25	b	38	b	b	b	63	b	b	b	b	b	b	b	b	b	b	e	22	22	22	70	22	b	70
26	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	22	30	75	50	b	b	57	53
27	22	40	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	18	22	52	22	77	25
28	b	62	30	27	22	22	e	e	b	b	b	b	b	b	b	b	b	b	22	e	22	22	57	22
29	17	b	c	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	e	e	22	25	30	22
30	22	b	b	30	22	e	e	e	b	b	b	b	b	b	b	b	b	b	b	22	b	22	b	40
31	b	b	b	b	b	b	e	e	b	b	b	b	b	b	b	b	b	e	e	e	27	b	b	22
Median	20	27	26	18	19																20	22	24	22
No.	20	22	22	21	21	20	21	18	11	9	5	2	1	1	2	4	13	23	27	29	23	24	22	26

28b

Unit 0.1 Mc

HOURLY VALUES OF foF2 OBSERVED DURING SEPTEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	a	s	b	b	b	b	57f	b	b	b	b	b	b	s	b	b	b	b	b	69	b	b	b
2	b	57f	f	b	b	b	b	b	63	67	75	u 75s	b	b	84	b	b	b	b	b	b	b	b	b
3	b	b	b	b	b	b	b	b	b	60	65	u 78r	u 83c	84c	75	b	b	b	b	b	b	b	b	b
4	b	b	b	b	b	b	b	b	b	63	65	72	73	75	b	76	74	60f	49f	68f	b	b	b	a
5	b	f	f	c	c	f	52f	58f	65	71	73	75	76	76	77h	79c	78	78	77	71f	64f	61f	57f	54
6	47	43	37	36	34	33	40	u 66f	u 83c	92j	d 77c	u 82c	d 77c	u105c	u 90c	83	84	49f	54f	59f	b	b	b	b
7	a	b	b	b	f	78	72f	b	72	76	78	79	79	82	78	80	79	77	77	76	71	66	50f	47
8	c	39f	37f	b	30	31	41	61	69	79h	s	d 77c	s	d 77c	u 85c	87c	d 77c	d 77c	80c	b	b	b	f	a
9	b	a	b	a	a	b	b	b	55	54	57h	61h	c	63h	66h	75h	75f	60f	f	53f	a	b	b	b
10	a	b	a	a	b	b	b	b	50	54	55h	57h	61h	64h	65h	66z	67h	66h	65j	58h	56f	48f	45f	b
11	s	46f	u 39f	f	34	b	42	57	60	75	78h	79	83p	d 90h	u 85c	81h	77h	54f	49f	48f	a	49f	a	a
12	a	b	a	c	28f	c	42	55	64	64h	69h	68h	69h	71h	71h	74	72	u 76r	s	67	69	62	58	57j
13	51	50	47	44	39j	38j	49	67	73	b	83	b	d 77c	d 77c	s	b	57f	f	f	49f	f	37f	44f	43f
14	w	a	a	28f	26f	b	45f	60	67h	71h	68	72	74	74	77h	77	78	77	77	74	c	59	54f	51
15	39f	36f	37f	37f	34f	33f	52	u 70s	86c	84h	u 85c	u 86c	d 77c	c	d 77c	84h	c	c	c	86c	79	u 70s	66j	52f
16	58f	59f	48f	49f	46f	43	58f	u 87c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	u 89c	d 77c	d 77c	s	d 77c	s	84	70	66j
17	59	56	b	b	b	u 51f	57f	61f	73	77	83	u 90c	84	d 77c	86	u 88c	d 77c	s	u 83s	80	79f	54f	50f	46f
18	47f	50f	44f	f	f	39j	52	66	79	89c	d 77c	d 77c	d 77c	d 77c	d 77c	83	84h	87c	s	71	71	72	77	70
19	69	62	59	56	51	47	64	82	s	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	84	84	s	u 80s	u 80s	s	u 87s	u 81s	s
20	s	67	61j	61	55	52	64	u 83s	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	s	f	f	u 57f	f	a	49f	a
21	50	b	a	a	a	b	56	60	65f	65	c	c	c	75f	83f	71f	f	c	w	c	b	a	a	a
22	b	a	a	b	a	45f	b	64	67	69h	75h	74h	76h	79h	79h	f	u 60f	f	b	a	a	b	a	b
23	b	b	a	a	b	b	b	53	57	63h	64h	66j	71h	81h	83h	87h	83h	75f	52f	u 65f	f	b	u 70f	b
24	f	f	b	49f	54f	51f	59f	69f	75	80h	u 88c	u84c	d 77c	d 77c	d 77c	u 87c	d 77c	d 77c	d 77c	u 84c	78	72j	f	s
25	b	f	57f	u 60f	f	59f	u 60f	80h	d 77c	d 77c	d77c	d 77c	d 77c	d77c	d 77c	d 77c	d 77c	d 77c	d 77c	f	f	u 63f	50f	f
26	u 69f	49f	b	u 46f	50f	49f	s	c	c	c	c	c	d 77c	d 77c	d 77c	d 77c	f	74f	58f	a	a	u 50f	a	a
27	f	f	b	f	50f	52	56	64	65j	69h	74h	77h	78h	85c	82c	u 87c	d 77c	s	d 75s	d 77c	77	59j	a	a
28	a	b	a	a	u 58s	s	s	69f	65f	68f	77	82	79	80	u 87c	d 77c	72f	s	c	69f	a	s	s	u 54
29	49f	s	b	a	u 50f	48f	u 57s	69j	68	72	76	79	82	d 85	s	u 88c	s	s	s	s	82	u 77s	s	52
30	50	48	44	39	39	b	56f	73f	79h	81h	u 84c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	s	s	s	s	s	s
31																								
Median	50	50f	44f	46f	42	48	56	66	68	72	77	d 77	d 77	d 77	d 77	83	d 77	77	77	70	71	62	56f	54
No.	11	13	11	11	16	16	20	23	25	27	26	26	25	27	26	20	22	17	14	20	11	17	14	11

29a

Unit 0.1 Mc.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING SEPTEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	a	s	b	b	b	b	290	b	b	b	b	b	b	s	b	b	b	b	b	250	b	b	b
2	b	280	f	b	b	b	b	b	310	310	300	310	b	b	290	b	b	b	b	b	b	b	b	b
3	b	b	b	b	b	b	b	b	b	300	300	u300	u300	300	260	b	b	b	b	b	b	b	b	b
4	b	b	b	b	b	b	b	b	b	300	310	300	290	300	b	300	310	270	250	255	b	b	b	a
5	b	f	f	c	c	f	290	300	310	300	300	295	290	290	300	305	305	305	290	285	290	280	290	275
6	285	275	275	275	270	280	310	u310f	u340c	c	c	u315c	c	295	305	305	300	285	265	265	b	b	b	b
7	a	b	b	b	f	285	285	b	295	300	290	280	285	290	295	290	290	285	275	255	280	275	290	250
8	c	265	270	b	290	270	290	305	310	300	s	c	s	c	u320c	315	c	c	210	b	b	b	f	a
9	b	a	b	a	a	b	b	b	260	255	255	275	c	260	270	290	275	295	f	255	a	b	b	b
10	a	b	a	a	b	b	b	b	275	275	275	265	255	285	275	270	270	295	295	280	265	265	u270f	b
11	s	255	f	f	270	b	295	310	305	305	320	320	320	c	u310c	310	305	275	265	u260f	a	255	a	a
12	a	b	a	c	255	c	280	290	290	285	285	290	280	280	290	275	290	u300s	s	290	270	270	265	255
13	270	270	270	270	285	c	295	305	300	b	300	b	c	c	s	b	280	f	f	f	f	f	u260f	260
14	w	a	a	265	260	b	290	300	295	295	285	280	275	275	280	285	290	295	300	270	c	270	265	270
15	255	280	265	265	260	260	295	u320s	310	320	310	295	c	c	c	320	c	c	c	290	295	u295s	280	290
16	295	270	290	280	285	285	295	305	c	c	c	c	c	c	c	305	c	c	s	c	s	280	290	275
17	285	275	b	b	b	u290f	310	300	290	290	295	285	295	c	295	u300c	c	s	u300s	295	270	270	270	275
18	290	275	260	f	f	265	300	300	290	280	c	c	c	c	c	320	315	310	s	320	305	305	300	290
19	280	290	275	285	280	285	295	310	s	c	c	c	c	c	c	320	315	s	u315s	u295s	s	u300s	u295s	s
20	s	290	280	295	290	290	305	u320s	c	c	c	c	c	c	c	c	s	f	f	f	f	a	f	a
21	260	a	a	a	a	b	260	285	235	250	c	c	c	230	240	255	f	c	w	c	b	a	a	a
22	b	a	a	b	a	255	b	275	290	265	250	270	265	265	270	f	u245f	f	b	a	a	b	a	b
23	b	b	a	a	b	b	b	290	280	260	265	265	265	255	270	250	280	255	245	u240f	f	b	f	b
24	f	f	b	f	250	265	290	290	290	305	u290c	u295c	c	c	c	u300c	c	c	c	u290c	275	s	f	s
25	b	f	260	u280f	fs	290	u315f	315	c	c	c	c	c	c	c	c	c	c	c	f	f	u285f	290	f
26	u270f	265	b	f	270	290	s	c	c	c	c	c	c	c	c	c	f	255	260	a	a	f	a	a
27	f	f	b	f	270	270	285	295	295	290	295	280	275	275	290	u290c	c	s	s	c	285	300	a	a
28	a	b	a	a	s	s	s	290	295	285	285	295	310	290	u280c	c	265	s	c	250	a	s	s	u275s
29	275	s	b	a	f	f	u300s	295	290	300	285	295	300	c	c	u295c	s	s	s	s	300	u280s	s	280
30	295	275	275	280	280	b	295	290	310	300	295	c	c	c	c	c	c	c	s	s	s	s	s	s
31																								
Median	280	275	270	u280	270	280	295	300	295	300	290	295	280	280	290	300	290	290	265	280	280	280	285	275
No.	12	13	10	9	14	14	20	23	22	22	20	19	14	14	17	20	15	12	13	16	11	14	12	11

29b

Unit 0.01

HOURLY VALUES OF h'F OBSERVED DURING SEPTEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	a	240	b	b	b	b	b	b	b	b	b	b	b	290	b	b	b	b	b	b	b	b	b
2	b	b	b	b	b	b	b	b	b	b	b	290	b	b	300	b	b	b	b	b	b	b	b	b
3	b	b	b	b	b	b	b	b	b	b	b	300	300	310	b	b	b	b	b	b	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	320	330	330	b	b	b	290	b	a	a	b	b	b	a
5	b	f	360	c	c	300	280	b	c	b	280	320	300	1	320	1	1	1	b	270	280	280	280	280
6	280	280	290	280	280	280	260	250	260	260	260	b	270	260	270	280	290	c	a	330	b	b	b	b
7	a	b	b	b	290	240	280	b	280	290	b	b	350	b	b	280	290	300	b	280	280	280	290	320
8	340	330	310	b	340	310	270	260	250	240	b	260	s	250	270	250	260	260	270	b	b	b	b	a
9	b	a	b	a	a	b	b	b	b	b	b	b	c	b	b	b	250	290	f	a	a	b	b	b
10	a	b	a	a	b	b	b	b	b	250	b	a	240	b	230	b	b	290	270	290	320	300	340	b
11	s	340	330	350	310	b	300	270	260	b	270	260	270	b	260	230	250	300	310	400	a	a	a	a
12	a	b	a	400	360	320	300	c	c	b	b	b	b	b	b	b	b	270	250	250	270	290	290	300
13	300	290	280	290	280	260	270	260	260	b	b	b	280	260	b	b	b	f	310	a	a	a	a	a
14	a	a	a	360	350	b	300	250	260	b	b	b	380	b	330	b	b	270	250	270	c	270	280	290
15	290	290	300	300	300	300	280	260	260	280	1	270	270	c	260	240	c	c	c	250	250	260	260	280
16	290	280	280	280	280	270	250	250	b	b	b	b	b	260	b	b	250	250	250	250	260	260	260	280
17	290	290	b	b	b	280	290	260	b	b	b	b	b	b	240	240	b	280	260	250	270	b	360	330
18	300	300	300	u350f	330	300	250	250	250	b	230	b	b	230	b	b	240	260	260	250	250	250	260	260
19	270	260	260	260	260	260	260	250	250	260	b	1	230	230	b	290	250	250	250	250	250	260	260	250
20	250	280	260	260	260	260	250	250	240	b	b	240	250	230	b	b	b	a	280	330	320	a	a	a
21	400	b	a	a	a	b	340	b	b	b	c	c	c	1	b	a	a	c	a	c	b	a	a	a
22	b	a	a	b	a	340	b	300	300	250	250	1	260	b	380	a	a	a	b	a	a	b	a	b
23	b	b	a	a	b	b	b	270	b	260	1	b	b	b	b	b	300	310	350	350	360	b	b	b
24	b	a	b	320	300	280	280	260	250	300	300	b	b	290	b	b	260	250	260	250	280	300	300	340
25	b	b	320	290	270	250	250	250	b	b	b	b	b	b	b	b	b	b	260	250	280	300	290	290
26	290	330	b	300	280	250	s	c	c	c	c	c	280	1	1	300	290	300	b	a	a	a	a	a
27	a	a	b	b	300	300	290	260	240	240	b	220	250	250	240	b	250	250	250	250	250	250	a	a
28	a	b	a	a	270	280	260	b	b	260	270	260	a	a	b	a	b	280	c	s	a	a	a	340
29	350	a	b	a	290	270	270	260	b	b	b	a	b	b	c	b	260	260	260	250	250	250	290	290
30	290	290	300	300	300	b	270	260	250	240	230	b	b	b	240+	a	250	250	260	250	270	a	a	a
31																								
Median	290	290	300	300	290	280	270	260	255	260	u270	265	270	255	270	265	260	270	260	250	270	270	290	290
No.	13	12	13	14	19	19	21	18	14	12	9	10	15	10	13	8	15	18	17	19	16	13	13	13

30a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING SEPTEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s

157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	a	s	b	b	b	b	b	b	b	b	b	b	b	s	b	b	b	b	b	b	b	b	b
2	b	b	b	b	b	b	b	b	b	b	b	300	b	b	340	b	b	b	b	b	b	b	b	b
3	b	b	b	b	b	b	b	b	b	b	b	320	320	330	390	b	b	b	b	b	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	340	350	350	330	b	320	320	340	420	410	b	b	b	a
5	b	f	f	c	c	f	350	310	300	320	320	350	320	340	340	330	310	330	340	350	360	350	350	360
6	350	370	370	360	370	350	310	280	270	300	c	320	c	320	310	310	320	c	380	350	b	b	b	b
7	a	b	b	b	f	310	300	b	320	310	340	360	350	340	340	340	340	340	370	370	350	350	360	400
8	c	390	380	b	390	310	330	300	300	300	s	c	s	c	290	280	c	c	320	b	b	b	b	a
9	b	a	b	a	a	b	b	b	b	400	g	g	c	460	400	350	340	350	f	a	a	b	b	b
10	a	b	a	a	b	b	b	b	370	290	g	g	430	380	380	370	360	340	350	370	380	370	380	b
11	s	400	380	f	390	b	350	300	310	300	300	280	300	c	300	330	340	390	340	420	a	a	a	a
12	a	b	a	c	400	c	340	350	340	340	320	360	370	350	350	350	340	320	s	370	370	400	390	430
13	400	380	380	380	370	c	330	300	300	b	350	b	c	c	s	b	350	f	f	f	a	a	a	a
14	a	a	a	400	420	b	340	320	330	340	370	380	380	380	350	340	350	350	340	390	c	380	380	380
15	360	420	380	370	350	370	370	310	310	300	320	300	c	c	c	300	c	c	c	330	340	340	330	340
16	370	400	360	380	370	360	310	310	c	c	c	c	c	c	c	300	c	c	s	c	s	370	370	370
17	370	370	b	b	b	340	320	320	320	370	350	360	350	c	330	330	c	s	360	360	340	340	420	380
18	360	350	410	f	f	390	320	300	300	330	c	c	c	c	c	300	300	310	s	300	310	310	310	310
19	320	340	340	360	340	330	320	300	s	c	c	c	c	c	c	310	310	s	290	330	s	350	350	s
20	s	370	350	360	350	350	310	270	c	c	c	c	c	c	c	c	s	f	f	340	f	a	a	a
21	410	b	a	a	a	b	360	340	b	420	c	c	c	g	400	a	f	c	w	c	b	a	a	a
22	b	a	a	b	a	360	b	330	330	400	380	370	400	400	400	f	f	f	b	a	a	b	a	b
23	b	b	a	a	b	b	b	310	310	400	400	450	400	400	370	370	350	370	390	390	f	b	410	b
24	f	f	b	350	350	340	310	310	320	310	320	340	c	c	c	320	c	c	c	350	370	400	f	s
25	b	f	370	350	f	330	310	300	c	c	c	c	c	c	c	c	c	c	c	f	f	320	330	f
26	380	400	b	c	350	300	s	c	c	c	c	c	c	c	c	c	f	310	b	a	a	a	a	a
27	f	f	b	f	400	320	340	340	340	350	330	350	370	350	330	330	c	s	s	c	360	350	a	a
28	a	b	a	a	300	s	s	310	320	330	330	340	350	350	360	c	370	s	c	s	a	s	s	380
29	390	s	b	a	350	340	320	310	320	340	340	340	320	c	c	320	s	s	s	s	340	350	s	370
30	350	380	390	380	390	b	320	310	320	330	320	c	c	c	c	c	c	c	s	s	s	s	s	s
31																								
Median	370	380	380	365	370	340	320	310	320	330	340	350	350	350	350	330	340	340	355	360	355	350	365	375
No.	11	12	11	10	16	15	20	22	19	20	19	19	14	14	17	19	14	11	12	15	10	14	12	10

30b

Unit 1 km.

HOURLY VALUES OF foE OBSERVED DURING SEPTEMBER 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								b	b	b	b	b	b	b	b	b	b	b	b					
2								b	b	b	b	b	b	b	b	b	b	b	b					
3								b	b	b	b	b	b	b	b	b	b	b	b					
4								b	b	b	b	b	b	b	b	b	b	b						
5								145	b	b	b	b	b	b	b	b	b	b	b	b					
6								u220	b	b	b	b	b	b	b	b	b	210f						
7							155	b	b	b	b	b	b	b	b	b	b	b	b					
8							b	210	a	a	b	b	b	b	b	b	b	200						
9								b	b	b	b	b	o	b	b	b	185	195						
10								b	b	a	b	a	b	b	b	b	b	205	145	180	200			
11							b	a	b	b	b	b	b	b	b	u315o	205	205	190f					
12							170f	220	275	b	b	b	b	b	b	b	b	220	155					
13							165	230	310	b	b	b	b	b	b	b	b	a	a					
14							205	a	b	b	b	b	b	b	b	b	b	215	150					
15							175	b	b	b	b	b	b	c	b	a	c	c	c					
16							175	b	a	b	b	b	b	b	b	b	b	215						
17							a	u225b	b	b	b	a	b	b	b	b	b	210	e160					
18							180f	190	a	a	a	a	a	a	a	a	205	205	150					
19							180	180	a	a	b	a	a	a	a	a	190h	210	e170					
20							180	240	a	a	b	a	a	b	b	b	b	a	a					
21							b	b	b	b	c	c	c	a	b	a	a	c	a					
22						210	b	b	a	315	a	b	b	b	b	a	a	a	b					
23						b	b	280	b	b	b	b	b	b	b	b	b	250	200a	205f				
24							190	245h	290	b	b	b	b	b	b	b	b	225	165					
25						e	185	245	a	b	b	b	b	b	b	b	b	b	b					
26							205	c	c	c	c	c	b	b	b	b	b	a	b					
27							200	240	a	a	a	b	390	380	a	a	285	220	170					
28						e	u200f	b	b	a	a	a	a	a	a	a	a	185	c					
29							200	255	b	a	a	a	a	b	c	a	a	b	175					
30							200f	250	290	u330b	u335b	a	b	a	a	a	285	245	e190a					
31																								
Median						-	180	230	-	-	-	-	-	-	-	-	205	210	165	-	-			
No.						3	16	15	4	2	1	0	1	1	0	1	6	16	9	2	1			

31a

Unit 0.01 Mc.

HOURLY VALUES OF fEs OBSERVED DURING SEPTEMBER 1956 AT MACQUARIE ISLAND

Sweep :- 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	b	d 59s	39	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
2	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
3	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	21	25	29	b	b	49
5	b	29	29	c	c	17	g	b	b	b	b	b	b	b	b	b	b	b	b	b	e	19	d 21c	e
6	e	e	e	e	e	e	e	21	d 21c	b	b	b	b	b	b	b	b	b	g	37	d 21c	b	b	b	b
7	73	b	b	b	b	21	e	b	b	b	b	b	b	b	b	b	b	b	b	e	16f	18	19h	20
8	21	17	e	b	21	e	e	g	21	25	b	b	b	b	b	b	b	g	e	b	b	b	b	74
9	b	58	b	70	59	b	b	b	b	b	b	b	c	b	b	b	29	21	21	59	74	b	b	b
10	72	b	70	60	b	b	b	b	b	29	b	28	b	b	b	b	b	21	18	g	g	24	55h	21
11	21	21	18	21f	e	b	b	21	b	b	b	b	b	b	b	g	21	g	28f	57	55	55	d 49s	d 49s
12	56	b	56	21	e	e	e	21	21	b	b	b	h	b	b	21	21	25f	21	e	20	e	e	21
13	29	30	e	e	e	e	e	21	g	b	b	b	b	b	b	b	b	21	21	21	21	57	70	39
14	21f	34	21	21	19	b	c	21	b	b	b	b	b	b	b	b	b	g	e	e	c	e	58	e
15	49	e	e	e	e	e	e	b	b	b	b	b	b	c	b	29	c	c	c	e	e	e	e	e
16	e	21	e	e	e	e	g	b	26	b	b	b	b	b	b	b	b	b	e	e	e	e	e	e
17	e	e	b	b	b	21	21	21	b	b	b	21	b	b	21	21	21	g	e	e	e	24	35f	21f
18	47	21	e	25	e	e	e	27	30	21	29	21	29	29	31	21	28	g	e	e	e	e	e	e
19	21	e	e	e	e	e	e	21	27	21	b	21	36	31	21	21	26	21	e	e	e	e	e	e
20	e	35	e	e	e	e	e	g	28	21	b	32	34	b	b	b	b	69f	58f	47	47	68	67	31
21	37	29	64	65	56	b	b	b	b	b	c	c	c	21	b	58	d 77f	c	54	c	b	56	56	73
22	b	52	52	b	53	21	b	b	21	g	21	b	b	b	b	59	29	59f	b	77h	73f	b	37	b
23	b	b	73	59	b	b	b	g	b	b	b	b	b	b	b	b	b	g	21	21	21	b	b	b
24	21	36	b	21	e	e	e	21	g	b	b	b	b	b	b	b	b	g	e	16	e	e	21	29
25	b	21	20	17	e	e	g	g	21	b	b	b	b	b	b	b	b	b	e	e	e	b	e	e
26	e	29	b	e	e	e	e	c	c	c	c	c	b	b	b	b	72	66	e	60	72	47	65	59
27	21	39	b	b	29	e	e	21	25	21	21	b	59	b	29	21	g	g	e	e	e	e	44	67
28	67	b	38	49	25	e	b	b	b	21	25	21	59	25	22	77h	21	28f	c	31	70	27	21	23
29	d 21c	47	b	53	e	e	e	d 21c	b	25	d 21c	70	d 21c	b	c	25	d 21c	20	e	e	e	e	e	e
30	e	e	e	e	e	b	d 21c	25	29	21	29	d 21c	29	d 21c	29	d 21c	g	24	d 21c	d 21c	d 21c	d 21c	d 21c	d 21c
31																								
Median	21	29	19	21				21	25	21	25	21	35	d 24	26	21	24	21	21	16	16	18	28	21
No.	21	22	20	20	21	19	18	16	12	10	5	7	6	5	6	11	12	20	21	24	23	20	20	23

31b

Unit 0.1 Mc

HOURLY VALUES OF foF2 OBSERVED DURING OCTOBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52f	58s	60	54	55	49	64	84	83	d 77c	d 77c	d 77c	d 77c	d 77c	u 88c	d 77c	d 77c	s	f	s	52f	s	s	b
2	b	s	a	a	f	51f	61	70	80	82	79h	u 87h	u 85h	u 87c	d 77c	d 77c	82h	66	b	a	a	a	a	a
3	a	b	a	a	a	b	b	51	55	60	64	b	74	80	79	78	73	72	s	57	a	a	b	a
4	b	b	b	a	b	b	b	58	69h	71	70h	74	c	78h	80h	c	79h	76h	u 75s	75	s	s	s	a
5	a	50f	a	38f	39	42	b	59	64	64h	70h	74h	75h	77h	77h	79h	78h	73h	b	b	a	b	b	u 63s
6	60f	w	w	w	31	39	53	62	67	64h	69h	68h	71h	72h	76h	78h	79h	s	s	s	a	a	a	a
7	a	b	b	b	37	49	54	56	60	w	w	67h	71h	b	76h	81	b	81	82h	70f	a	55f	49	c
8	c	c	c	c	c	c	c	c	c	c	62	u 65w	w	64	w	75	u 72s	70f	78f	68f	54f	a	54f	50f
9	49	49f	48f	39f	b	b	51	55	b	63	66h	66h	68h	68h	68h	72h	74h	76	73	f	a	a	c	c
10	b	49f	50f	40f	39f	b	52f	54	59	65h	68h	73h	75h	77h	82h	81h	79h	82c	84c	s	f	f	67f	f
11	55f	53f	48f	41f	43f	53f	66f	75f	84c	d 77c	u 89c	d 77c	c	c	c	c	c	d 77c	d 77c	95	u 80f	f	f	f
12	f	s	s	f	f	52	59	69	74h	76h	78h	78	d 77c	83c	c	c	u 88c	u 87c	c	94c	s	s	s	f
13	f	f	f	52f	50	s	72h	73h	77h	87h	d 77c	98c	c	95c	100h	110	c	u100c	c	93c	d 77c	s	77f	s
14	67j	64j	54f	49f	s	s	s	72	78	80	d 77c	d 90c	d 90c	d 90c	d 90c	d 90c	d 90c	d 77c	d 90c	d 77c	d 77c	s	74f	73f
15	s	s	64f	49f	48f	60	76	79h	80h	82c	80h	83c	83c	u 87c	u 88c	u 84c	u 83c	u 85c	s	s	s	s	s	s
16	s	63j	60j	56	52	62	75	79h	80h	c	c	c	d 77c	d 77c	u 88c	d 77c	d 77c	u 87c	s	u 87c	s	c	78j	u 76s
17	s	70	62f	u 70s	65	s	70	71h	76h	74h	77h	76h	77h	b	b	c	c	c	u 85c	d 77c	85	u 73s	f	f
18	u 65s	71f	58f	63f	54f	71	s	79	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	93	90	d 77c	u 85c	d 77c	99j	97j	u 90c	75f	67f
19	c	67f	57f	58	52	55	72	74	75	79h	83c	u 85c	c	c	c	c	c	c	c	c	c	c	a	a
20	77	75	66	68	58f	s	69	d 77c	d 77c	d 77c	d77c	d77c	d 77c	d 77c	d 77c	d 77c	74	70	72	76	b	f	60	f
21	b	a	b	b	b	b	b	b	55h	67h	75h	72h	73h	78h	77h	72h	77h	61h	b	a	a	b	b	b
22	b	b	b	a	b	b	b	b	b	b	56h	58h	58h	66j	82c	d 77c	d 77c	d 77c	83c	84c	b	78	70	70
23	b	b	b	b	b	b	d 77c	d 77c	d 77c	d 77c	82c	84c	84c	d 70r	77h	72h	76h	77	76f	57	b	a	b	b
24	b	b	b	b	b	59	59	63	76	75h	b	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	d 77c	78	69	76
25	70	62	68	59	54	58	66	68	72h	71h	72h	72h	76h	75h	76h	78h	81	84	c	c	d 77c	74	74f	77
26	68	68	58	57	53	67	72	78e	d 77c	d 77c	d 77c	d 77c	90j	91j	d 77c	88j	c	79	79	d 77c	d 77c	76	70	66
27	a	a	a	b	b	b	b	b	b	b	54h	73	d 77c	72h	b	b	a	58	b	a	b	a	a	a
28	b	a	a	b	47	50	c	77	82c	d 77c	d 77c	d100c	d100c	d100c	110	d100c	77h	b	b	a	b	b	a	a
29	b	56	b	b	b	56	52h	57h	61j	64h	68h	73h	74h	73h	77h	78h	79	c	c	c	c	b	b	a
30	b	a	b	b	c	c	c	c.	c	c	c	77h	78h	80h	83c	83c	80h	77h	u 87c	b	b	b	b	b
31	b	b	b	b	47	53	58	60h	68h	74h	80h	78h	78h	81h	78h	78h	76h	77h	78h	d 77c	d 77c	76	b	b
Median	u 65	62	58f	54f	50	53	65	70	76	76	d 77	d 77	d 77	78	80	79	79	d 77	79	80	d 77	u 76	70	u 70
No.	9	14	13	15	17	17	20	26	26	25	27	29	26	21	25	19	19	25	13	12	11	8	12	9

32a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING OCTOBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/ s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	255	285	270	290	265	285	305	300	315	c	c	c	c	c	u300c	c	c	s	f	s	f	a	a	b
2	b	s	a	a	f	290	300	300	300	310	300	u305c	u300c	u285c	c	c	290	275	b	a	a	a	a	a
3	a	b	a	a	a	b	b	265	275	255	265	b	260	270	270	270	270	275	s	265	a	a	b	a
4	b	b	b	a	b	b	b	285	290	290	260	270	c	270	270	c	285	290	u275s	240	s	s	s	a
5	a	255	a	255	265	280	b	290	265	260	265	260	260	260	270	275	270	280	b	b	a	b	b	u270s
6	280	w	w	w	255	270	305	295	295	270	270	270	255	260	255	260	275	s	s	s	a	a	a	a
7	a	b	b	b	250	270	280	280	275	w	w	255	260	b	260	275	b	280	285	270	a	245	240	c
8	c	c	c	c	c	c	c	c	c	c	245	w	w	260	w	240	u260s	f	285	f	265	a	250	260
9	255	f	265	250	b	b	285	270	b	260	250	250	250	250	255	250	260	255	280	f	a	a	c	c
10	b	245	f	250	235	b	285	275	280	255	250	250	250	255	270	275	280	295	290	s	f	f	f	f
11	240	255	255	275	255	260	250	275	305	c	u290c	c	c	c	c	c	c	c	c	270	u220f	f	f	f
12	f	s	s	f	f	270	295	285	270	280	265	270	c	260	c	c	u270c	u275c	c	260c	s	s	s	f
13	f	f	f	240	260	s	275	290	300	275	c	265c	c	275c	260	245	c	u255c	c	265c	c	s	150	s
14	s	s	235	f	s	s	s	295	270	265	c	c	c	c	c	c	c	c	c	c	c	s	250	250
15	s	s	240	265	250	270	290	290	290	270c	290	260c	265c	u255c	u255c	u270c	u275c	u275c	s	s	s	s	s	s
16	s	s	s	240	255	280	290	290	285	c	c	c	250	250	265	c	c	u270c	s	u235c	s	c	s	s
17	s	245	250	s	250	s	270	280	270	270	270	255	250	b	b	c	c	c	u300c	c	255	s	f	f
18	u240s	240	245	245	260	265	s	280	c	c	c	c	c	c	250	260	c	u290c	c	255	250	u240c	230	250
19	c	240	240	265	260	275	275	270	280	275	270c	u275c	c	c	c	c	c	c	c	c	c	c	a	a
20	245	250	250	250	255	s	300	c	c	c	c	c	c	c	c	c	230	230	235	245	b	f	240	f
21	b	a	b	b	b	b	b	b	225	230	225	230	235	230	235	235	295	250	b	a	a	b	b	b
22	b	b	b	a	b	b	b	b	b	b	230	230	220	240	230c	c	c	c	250c	240c	b	240	250	240
23	b	b	b	b	b	b	c	c	c	c	255c	250c	235c	r	225	255	260	255	275	250	b	a	b	b
24	b	b	b	b	b	280	280	270	260	260	b	c	c	c	c	c	c	c	c	c	c	245	240	250
25	255	250	265	255	260	270	275	275	265	245	255	255	245	240	250	255	260	260	c	c	c	240	245f	250
26	260	260	260	250	275	285	300	290	c	c	c	c	255	245	c	240	c	240	250	c	c	245	240	240
27	a	a	a	b	b	b	b	b	b	b	210	220	c	230	b	b	a	250	b	a	b	a	a	a
28	b	a	a	b	280	295	c	295	290c	c	c	c	c	c	255	c	255	b	b	a	b	b	a	a
29	b	220	b	b	b	260	235	245	250	240	235	230	235	230	235	245	250	c	c	c	c	b	b	a
30	b	a	b	b	c	c	c	c	c	c	p	250	255	250	250	260	255	260	245	b	b	b	b	b
31	b	b	b	b	250	260	260	240	250	250	245	250	245	240	245	240	240	250	250	c	c	230	b	b
Median	u255	250	250	250	255	270	285	280	280	260	255	255	250	250	255	255	265	265	275	255	-	u240	240	250
No.	8	12	12	14	17	17	19	24	22	19	21	21	19	20	21	17	18	20	12	11	4	7	10	8

32b

Unit 0.01

HOURLY VALUES OF h'F OBSERVED DURING OCTOBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	330	300	280	270	260	270	260	250	250	220	c	c	a	a	c	c	b	260	250	250	a	a	a	b
2	b	a	a	a	a	290	260	b	b	a	b	b	b	b	260	b	b	c	b	a	a	a	a	a
3	a	b	a	a	a	b	b	a	b	b	b	b	b	b	b	b	b	280	300	240	a	a	b	a
4	b	b	b	a	b	b	b	270	a	b	b	b	c	b	b	c	b	270	a	350	a	a	a	a
5	a	360	a	390	350	310	b	b	b	b	b	b	b	b	230	c	250	280	b	b	a	b	b	360
6	340	340	340	350	350	340	280	b	a	a	b	220	b	b	b	250	c	280	310	290	a	a	a	a
7	a	b	b	b	370	340	290	260	250	b	b	b	b	b	b	b	b	b	b	300	a	370	380	c
8	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	q	230	290	330	a	a	370
9	350	340	330	350	b	b	250	250	b	b	b	b	b	b	b	b	b	b	b	300	a	a	c	c
10	b	350	330	340	340	b	280	270	b	b	260	b	b	b	b	b	b	270	280	270	260	280	290	300
11	340	310	300	290	300	300	250	250	230	230	b	b	c	c	c	c	c	b	a	250	280	380	340	310
12	330	360	330	300	300	290	260	b	240	b	b	b	b	a	c	c	a	a	c	250	260	290	320	350
13	300	300	300	300	300	300	b	b	b	b	b	b	c	b	b	b	c	b	c	280	260	280	290	300
14	300	290	300	300	300	a	a	b	b	b	b	b	b	b	b	b	b	b	b	250	260	280	310	300
15	300	300	290	280	300	300	b	b	b	b	b	b	b	b	b	b	b	a	290	270	260	260	260	280
16	300	300	300	300	300	300	a	240	b	c	c	c	b	b	b	b	250	b	300	1	a	c	350	320
17	300	290	300	280	300	300	250	b	b	b	c	c	c	c	c	c	c	c	300	280	300	320	310	330
18	320	300	300	300	300	290	250	240	b	b	b	b	b	b	b	b	b	b	260	250	260	300	300	300
19	c	300	310	300	300	300	300	c	c	c	b	b	c	c	c	c	c	c	c	c	c	c	a	a
20	350	300	300	300	290	300	250	240	b	b	b	b	b	b	b	b	b	b	a	a	b	f	a	f
21	b	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	a	b	b	b
22	b	b	b	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	300	300	a
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	300	300	a	330
25	350	240	300	b	300	300	b	b	b	b	b	b	b	b	b	b	b	b	c	c	350	b	400	320
26	300	300	300	300	280	270	250	240	250	240	b	b	b	b	b	b	b	b	b	250	320	a	a	a
27	a	a	a	b	b	b	b	b	b	a	b	b	b	b	b	b	a	a	b	a	b	a	a	a
28	b	a	a	b	a	300	c	b	b	b	b	b	b	b	b	b	b	b	b	a	b	b	a	a
29	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	b	c	c	c	b	b	a
30	b	a	b	b	c	c	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b	b	b	b
31	b	b	b	b	a	350	b	250	b	b	b	b	b	b	b	b	b	b	b	b	320	a	b	b
Median	325	300	300	300	300	300	260	250	u250	-	-	-	-	-	-	-	-	u275	290	270	280	300	310	320
No.	14	17	16	16	17	18	13	11	5	3	1	1	0	0	2	1	2	6	9	16	13	11	12	13

33a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING OCTOBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	370	350	350	330	330	320	300	300	300	c	c	c	c	c	300	c	c	s	f	s	a	a	a	b
2	b	s	a	a	f	330	300	320	320	330	330	330	330	310	c	c	350	380	b	a	a	a	a	a
3	a	b	a	a	a	b	b	a	b	430	450	b	400	410	370	370	400	340	350	360	a	a	b	a
4	b	b	b	a	b	b	b	350	340	350	430	370	c	380	380	c	350	350	s	400	s	s	s	a
5	a	400	a	420	380	350	b	350	370	400	430	380	390	400	400	370	380	360	b	b	a	b	b	400
6	400	w	w	w	400	380	300	330	320	350	430	420	430	430	430	430	400	s	s	s	a	a	a	a
7	a	b	b	b	420	400	350	370	360	w	w	g	430	b	430	390	b	360	350	370	a	420	450	c
8	c	c	c	c	c	c	c	c	c	c	g	g	w	g	g	450	410	370	310	300	370	a	a	380
9	400	370	420	400	b	b	350	360	b	400	g	g	450	500	450	440	390	400	340	f	a	a	c	c
10	b	400	400	420	430	b	360	350	350	460	390	450	370	360	350	380	360	340	350	s	f	f	350	f
11	410	400	380	420	400	350	350	300	300	c	300	c	c	c	c	c	c	c	c	380	370	f	f	f
12	f	s	s	f	f	350	300	350	370	370	400	330	c	380	c	c	390	380	c	360	s	s	s	f
13	f	f	f	370	380	s	300	320	300	350	c	390	c	400	380	390	c	350	370	c	c	s	380	s
14	360	350	370	380	s	s	s	350	370	380	c	c	c	c	c	c	c	c	c	c	c	s	400	400
15	s	s	380	370	390	400	330	330	340	320	360	420	380	400	410	400	360	350	s	s	s	s	s	s
16	s	380	420	410	400	340	300	320	340	c	c	c	c	c	370	c	c	350	s	360	s	c	470	440
17	s	330	350	350	390	s	330	340	360	350	390	400	430	b	b	c	c	c	340	c	400	400	f	f
18	430	390	380	400	350	350	s	340	c	c	c	c	c	c	400	380	c	340	c	370	380	430	450	440
19	c	400	390	380	390	340	300	310	350	370	350	370	c	c	c	c	c	c	c	c	c	c	a	a
20	460	410	410	410	350	s	310	c	c	c	c	c	c	c	c	c	b	b	450	420	b	f	450	f
21	b	a	b	b	b	b	b	b	g	g	510	540	460	460	500	480	310	390	b	a	a	b	b	b
22	b	b	b	a	b	b	b	b	b	b	g	g	g	510	460	c	c	c	370	400	b	400	430	430
23	b	b	b	b	b	b	c	c	c	c	450	450	450	r	470	420	400	410	350	400	b	a	b	b
24	b	b	b	b	b	b	340	380	410	430	b	c	c	c	c	c	c	c	c	c	c	400	420	400
25	430	430	400	410	400	360	360	360	400	440	450	450	470	480	440	370	400	370	c	c	c	440	450	420
26	400	400	400	370	360	320	310	340	c	c	c	c	450	460	c	480	c	430	420	c	c	430	450	450
27	a	a	a	b	b	b	b	b	b	b	g	530	c	g	b	b	a	a	b	a	b	a	a	a
28	b	a	a	b	370	320	c	310	320	c	c	c	c	c	410	c	410	b	b	a	b	b	a	a
29	b	550	b	b	b	400	470	470	g	g	g	500	g	g	470	450	430	c	c	c	c	b	b	a
30	b	a	b	b	c	c	c	c	c	c	c	460	440	460	450	410	400	420	400	b	b	b	b	b
31	b	b	b	b	430	400	400	440	450	450	450	380	450	450	460	460	450	440	410	c	c	500	b	b
Median	400	400	395	400	390	350	330	340	350	400	450	450	445	450	430	410	400	370	350	380	-	425	450	u420
No.	9	15	14	16	17	16	19	23	21	19	21	21	18	19	21	17	17	19	13	11	4	8	11	9

33b

Unit 1 km

HOURLY VALUES OF foE OBSERVED DURING OCTOBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0– 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							205	260h	c	a	a	b	a	a	c	c	b	220	175					
2							230	b	b	a	b	b	b	b	b	b	b	b	b	a				
3								a	b	b	b	b	b	b	b	b	b	215h	210	a				
4								a	a	b	b	b	c	b	b	c	b	245h	a	a				
5						170	b	b	b	b	b	b	b	b	a	c	300	255h	b	b	a			
6						165	240h	b	a	a	b	a	b	b	b	c	c	265	205	q				
7						190	225h	290	340	b	b	b	b	b	b	b	b	b	b	215				
8						c	c	c	c	c	b	b	b	b	b	b	c	250h	215	q				
9								285	b	b	b	b	b	b	b	b	a	b	b					
10							250	285	b	a	a	b	b	b	b	b	b	260	205	q				
11						170	235	285	315	330	b	b	c	c	c	c	c	b	b	e				
12						175	215	b	315	b	b	b	b	b	c	c	b	a	c	q				
13						175	a	b	b	b	b	b	c	b	b	b	c	b	c	q				
14						b	b	b	b	b	b	b	b	b	b	b	b	a	220	q				
15						e	b	b	b	b	b	b	b	b	b	b	b	180	200	e				
16						170	a	200	b	c	c	c	b	b	b	b	a	a	195	a				
17						175	175	a	a	b	c	c	c	c	c	c	c	c	195	e				
18						175	170	205	b	b	b	b	b	b	b	b	b	b	195	e				
19						175	200	c	c	c	b	b	c	c	c	c	c	c	c	c				
20						185	180	a	a	a	b	b	b	b	b	b	b	b	a					
21						b	b	b	b	b	b	b	b	b	b	b	b	b	b	a	a			
22											b	b	b	b	b	b	b	b	b	b	b			
23							b	b	b	b	b	b	b	b	b	b	b	b	b	u165e				
24						b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	180			
25						200	b	b	b	b	b	b	b	b	b	b	b	b	a	195				
26						200	a	a	u340b	b	b	b	b	b	b	b	b	b	a	190	q			
27						b	b	b	b	b	b	b	b	b	b	b	a	a	b	a	b			
28							b	b	b	b	b	b	b	b	b	b	b	b	b	b				
29						b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c			
30						c	c	c	c	c	c	b	b	b	b	b	b	b	b	b				
31						b	b	u315p	b	b	b	b	b	b	b	b	b	a	a	a	a			
Median						175	215	285	-	-	-	-	-	-	-	-	-	250	200	165	-			
No.						14	11	8	4	1	0	0	0	0	0	0	1	8	10	8	1			

34a

Unit 0.1 Mc

HOURLY VALUES OF fEs OBSERVED DURING OCTOBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	d 21c	e	e	e	e	e	d 21c	25	d 21c	58	59	56	34	58	22	d 21c	b	25	d 21c	e	36	54	64	b
2	b	30	53	64	37	e	d 21c	b	b	59	b	b	b	b	b	b	b	b	b	73	74	57	67	69f
3	59	b	54	59	30	b	b	37	b	b	b	b	b	b	b	b	b	28	g	44	70	69	b	59
4	b	b	b	30	b	b	b	34	59	b	b	b	c	b	b	c	b	d 21c	31	25f	48	39	35	51
5	37	29	35	26	24	d 21c	b	b	b	b	b	b	b	b	29	d 21c	g	22	d 21c	b	75	b	b	30
6	d 21c	20	e	e	d 21c	e	d 21c	b	30	30	b	30	b	b	b	30	d 21c	g	22	30	37	64	49	54
7	59	b	b	b	34	21	e	34	60	b	b	b	b	b	b	b	b	b	b	g	70	30	30	c
8	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b	b	29	g	e	20	31f	35	37	27
9	22	e	e	d 21c	b	b	d 21c	g	b	b	b	b	b	b	b	b	d 21c	b	b	d 21c	50	55	c	c
10	b	d 21c	20	e	e	b	g	g	d 21c	26	28	b	b	b	b	b	b	b	b	e	e	e	e	e
11	d 21c	d 21c	e	e	e	e	g	g	g	58	b	b	c	c	c	c	c	b	b	e	e	47	20	20
12	25	29	e	e	e	e	g	b	20	b	b	b	b	b	c	c	b	d 21c	c	e	e	e	e	d 21c
13	22	e	e	e	e	e	d 21c	b	b	b	b	b	e	h	h	b	c	b	c	e	e	e	e	e
14	e	e	e	e	e	e	b	b	b	b	b	b	b	b	h	b	b	d 21c	g	e	e	e	57	d 21c
15	20	e	e	e	e	e	b	b	b	b	b	b	b	b	b	b	b	d 21c	g	e	e	e	e	e
16	e	e	e	e	e	g	d 21c	d 21c	b	c	c	c	b	b	b	b	d 21c	d 21c	g	d 21c	d 21c	c	d 21c	d 21c
17	d 21c	d 21c	e	e	e	e	d 21c	d 21c	d 21c	b	c	c	c	c	c	c	c	c	20	e	e	d 21c	d 21c	e
18	d 21c	e	e	e	e	g	d 21c	d 21c	b	b	b	b	b	b	b	b	b	b	g	e	e	e	e	e
19	c	e	e	e	e	e	20	20	c	c	h	h	c	c	c	c	c	c	c	c	c	c	74	60
20	20	20	e	e	e	19	d 21c	20	d 21c	d 21c	b	b	b	b	b	b	b	b	48	34	b	60	60	d 21c
21	b	68	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	74	60	b	b	b
22	b	b	b	49	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d 21d	d 21c	d 21c
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d 21c	b	75	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e	e	d 21c	d 21c
25	e	e	e	e	e	e	b	b	b	b	b	b	b	b	b	b	b	b	d 21c	19	d 21c	b	b	e
26	e	e	e	e	e	g	d 21c	d 21c	d 21c	b	b	b	b	b	b	b	b	b	d 21c	25	d 21c	25	d 21c	d 21c
27	36	58	60	b	b	b	b	b	b	b	b	b	b	b	b	b	61	60	b	66f	b	59	72	78
28	b	60	35	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	66	h	b	75	76
29	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	b	b	70
30	b	57	b	b	c	c	c	c	c	c	c	b	b	b	b	b	b	b	b	b	d 21c	b	b	b
31	b	b	b	b	d 21c	d 21c	b	d 21c	b	b	b	b	b	b	b	b	b	d 21c	25	25	25	25	b	h
Median	22	20					d 21	d 21	d 21	58							d 21	d 21		20	28	35	49	30
No.	13	22	21	21	20	18	15	14	10	5	2	2	1	1	2	3	6	12	11	22	20	21	17	17

34b

Unit 0.1 Mc

HOURLY VALUES OF foF2 OBSERVED DURING NOVEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	73	77	b	b	b	60	71	74h	79	84e	u 88e	b	d 77e	d 77e	d 77e	d 77e	d 77e	d 77e	b	d 77e	84e	82	72f	70
2	57	b	b	b	b	62	58	65	64h	65j	68h	70h	71h	77h	70h	71h	72h	73h	78h	78	80	s	a	b
3	61	57	b	b	b	54	58	70	74h	75h	79h	d 77e	d 77e	84e	84e	e	d 77e	d 77e	77h	78	b	b	b	b
4	b	b	b	42f	b	b	b	b	57	64j	b	72h	73h	72h	78h	81h	81h	78h	u 85e	78h	73f	76	61f	68
5	56	59	b	b	b	57j	68h	59h	62h	b	b	64h	65j	65j	66h	67h	67h	67j	68j	70	74	68	70	66
6	58	61	55	53	49	58j	e	e	e	e	b	b	b	b	b	e	b	b	d 80	d 90	81	71	60	b
7	60	58	b	b	b	61	58j	61h	b	66j	h	b	69h	71h	68h	72h	73	77	75	82	u 84e	u 85e	73	68j
8	72	63	b	55	u 60s	60	59	60	63j	63j	66	67	68	70	69	71	74	b	b	u 87e	u 84e	80	75	63
9	63f	63	59f	56	58	56j	57h	60h	u 69b	65j	72h	73h	74h	72h	74h	75h	76h	76h	80h	82e	s	76	66	b
10	55	56	53	b	b	b	b	b	b	b	b	74	80	85e	b	b	b	b	b	b	b	b	b	b
11	a	b	b	b	b	b	b	b	b	b	b	b	c	e	b	b	b	b	b	a	a	a	a	b
12	a	b	a	a	b	b	b	b	b	b	b	83e	83e	77	77	s	78	71	73	s	b	49	s	a
13	b	a	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	73h	76h	74h	73h	b	76h	74h	b	b	b	b	a	a	b
15	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
16	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
17	b	c	c	c	c	c	c	c	c	c	c	b	s	73h	62h	68h	68h	68h	s	77	s	s	a	b
18	b	a	a	a	b	b	b	b	b	w	59h	72h	79h	b	d 77e	77h	73h	68f	b	59f	65f	56	s	b
19	b	u 55s	60j	48	50	49h	53h	59h	61h	68h	72h	77h	77h	82h	80h	84e	84e	d 77e	s	u 84e	a	75	72	74j
20	62	s	61	57	58	66h	76h	s	d 77e	u 83e	s	83e	s	d 77e	d 77e	d 77e	d 77e	d 77e	d 77e	s	s	s	74	s	a
21	a	b	57f	b	51f	b	64h	71h	75h	d 77e	78h	84e	b	82h	b	83h	72h	77	s	b	b	b	b	s
22	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	73h	72h	e	e	e	e	e	e
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	b	b	b	e	e	e	e	e	b	b	b	d 77e	d 77e	d 77e	d 77e	s	b	b
25	b	b	b	b	b	b	b	u 58s	e	e	74h	76h	71h	70h	72h	70h	71h	74h	79h	74	b	b	s	s
26	b	b	a	b	b	b	49	58h	64h	71h	73h	76h	76h	76h	79h	84e	80h	77h	79h	78	80e	77	75	61
27	57	53	53	52	56	57	58	63	62j	69	71	76	77	78	82	80	78	82	82	80	69	63	68	58f
28	45j	s	46	41	44j	b	52	w	63h	67h	71h	70h	75h	80h	u 84e	77h	d 77e	74h	s	f	e	e	e	b
29	a	a	b	b	a	s	w	58h	66j	77h	82h	78h	83h	e	u 86e	e	82h	e	d 77e	e	e	54	53f	54f
30	50f	48	42	41	44	b	b	w	u 56w	65h	65h	68h	71h	71h	75h	78h	78h	84h	82h	s	60j	a	a	a
31																								
Median	58	58	u 55	u 52	u 51	58	58	60	64	68	72	76	75	76	76	77	77	77	79	78	80	74	70	u 66
No.	13	11	9	9	9	11	13	13	15	15	15	19	19	20	16	18	18	20	12	14	11	14	11	9

35a

Unit 0.1 Mc

HOURLY VALUES OF (M3000)F2 OBSERVED DURING NOVEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 – 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	230	245	b	b	b	290	270	280	275	265e	u250e	b	e	e	e	e	e	e	b	e	260e	250	250	235
2	245	b	b	b	b	245	265	245	240	225	230	225	220	230	230	230	245	250	240	255	250	s	a	b
3	230	225	b	b	b	270	290	285	245	240	235	e	e	255e	250e	e	e	e	250	255	b	b	b	b
4	b	b	b	f	b	b	b	b	230	245	b	235	230	245	240	255	250	265	u250e	240	220	230	235	235
5	235	240	b	b	b	260	265	245	235	b	b	225	230	e	235	235	245	250	260	250	235	240	230	225
6	225	235	240	250	260	240	e	e	e	e	b	b	b	b	b	e	b	b	e	e	225	225	225	b
7	225	235	b	b	b	230	265	230	b	230	b	b	230	230	225	225	225	240	245	255	230	230	230	240
8	235	240	b	255	u280s	270	250	235	235	230	235	230	225	230	230	230	230	b	b	u255e	u245e	235	235	240
9	215	220	225	235	250	260	255	250	u235b	e	225	230	235	230	235	235	235	245	245	250e	s	230	230	b
10	225	225	240	b	b	b	b	b	b	b	b	210	235	u230e	b	b	b	b	b	b	b	b	b	b
11	a	b	b	b	b	b	b	b	b	b	b	b	c	e	b	b	b	b	b	a	a	a	a	b
12	a	b	a	a	b	b	b	b	b	b	b	235e	245e	240	225	s	225	235	240	s	b	215	s	a
13	b	a	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	225	235	225	225	b	240	240	b	b	b	b	a	a	b
15	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
16	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
17	b	c	c	c	c	c	c	c	c	c	c	b	s	215	225	235	235	245	s	250	s	s	a	b
18	b	a	a	a	b	b	b	b	b	w	220	230	235	b	c	260	230	245	b	u240f	u230f	240	s	b
19	b	s	275	230	255	245	245	245	230	260	240	240	250	255	260	260e	265e	c	s	u270e	a	245	260	240
20	250	s	245	265	285	275	275	s	c	u280e	s	270e	s	c	c	c	c	c	280	s	s	240	s	a
21	a	b	240	b	265	b	240	260	260	c	260	250e	b	255	b	255	255	260	s	b	b	b	b	s
22	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	250	240	c	c	c	c	c	c
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	b	b	b	c	c	c	c	c	b	b	b	c	c	c	c	s	b	b
25	b	b	b	b	b	b	b	u235s	e	e	225	225	230	235	235	235	250	255	235	265	b	b	s	s
26	b	b	a	b	b	b	215	235	230	240	230	235	240	235	240	235e	250	255	250	250	250e	245	230	235
27	235	240	235	250	255	260	250	235	240	230	230	250	255	235	245	240	260	265	260	260	235	225	225	225f
28	250	s	220	235	c	b	245	w	210	235	220	225	220	250	u250e	230	c	240	s	f	c	c	c	b
29	a	a	b	b	a	s	w	245	c	235	250	250	260	c	u250e	c	250	c	c	c	c	230	220	225
30	245	220	235	250	260	b	b	w	w	230	230	230	230	230	230	230	240	240	240	s	225	a	a	a
31																								
Median	235	235	240	250	260	260	250	245	235	230	230	230	230	235	235	235	245	245	250	255	235	230	230	u235
No.	13	10	9	8	8	11	14	15	13	14	15	18	17	17	16	16	18	15	12	13	11	14	11	9

35b

Unit 1 km

HOURLY VALUES OF h'F OBSERVED DURING NOVEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	a	a	b	b	b	b	1	b	b	b	b	b	b	b	b	h	250	b	b	b	330	320	350	b
2	360	b	b	h	b	b	300	b	b	240	b	b	270	u240p	230	220	230	b	b	350	330	a	a	b
3	430	380	b	b	b	a	250	300	b	260	b	b	b	b	b	b	b	b	b	410	b	b	b	b
4	b	b	b	400	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	350	350	350	370	390
5	350	350	h	b	b	250	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	300	330	320
6	300	330	300	320	b	b	c	c	c	c	b	b	b	b	b	b	b	b	b	350	b	400	360	b
7	390	400	b	b	b	b	b	b	b	290	b	b	260	b	b	b	b	b	b	b	300	340	350	300
8	350	350	h	330	b	b	b	b	b	300	230	250	b	b	280	b	b	b	b	b	340	300	300	340
9	a	400	350	350	350	b	b	b	b	b	b	250	b	250	b	b	b	b	b	350	320	b	380	b
10	a	380	370	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
11	a	b	b	b	b	b	b	b	b	b	b	b	c	c	b	b	b	b	b	a	a	a	a	b
12	a	b	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	450	s	a
13	b	a	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	b	b	230	b	b	b	b	b	b	b	b	a	a	b
15	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
16	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
17	b	c	c	c	c	c	c	c	c	c	c	b	b	250	b	b	b	b	b	350	s	s	a	b
18	b	a	a	a	b	b	b	b	b	b	h	b	b	b	b	b	b	b	b	b	b	b	a	b
19	b	b	350	350	350	280	b	b	250	260	290	300	320	300	b	b	b	b	310	300	320	350	350	340
20	350	s	350	300	320	b	300	b	b	240	b	250	240	250	240	b	280	b	300	350	s	400	s	a
21	a	b	b	b	b	b	b	300	b	b	240	b	b	250	b	b	b	b	s	b	b	b	b	s
22	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	b	b	b	c	c	c	c	c	b	b	b	b	b	b	b	h	b	b
25	b	b	b	b	h	b	b	s	c	c	b	b	b	220	220	220	b	b	a	400	b	b	s	s
26	b	b	a	b	b	b	b	b	260	b	270	b	270	260	270	b	b	b	b	b	340	330	340	a
27	u380p	330	a	360	c	b	a	b	b	b	b	280	260	b	260	b	b	b	a	320	320	360	340	390
28	310	320	370	390	c	b	b	b	b	b	b	b	b	b	b	b	b	b	s	f	c	c	c	b
29	a	a	b	b	a	270	260	250	230	260	240	240	240	230	250	260	b	c	270	c	c	320	350	350
30	350	350	350	340	320	b	b	230	250	250	240	240	240	240	240	a	b	a	a	300	a	a	a	a
31																								
Median	350	350	u350	u350	-	-	-	-	-	u260	u240	u250	u260	250	245	-	-	-	-	350	u330	345	350	340
No.	10	10	7	9	4	3	4	4	4	8	6	7	9	10	8	3	3	0	3	11	9	12	11	7

36a

Unit 1 km

HOURLY VALUES OF hpF2 OBSERVED DURING NOVEMBER 1956 AT MACQUARIE ISLAND

Sweep : 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	550	450	b	b	b	330	340	330	360	400	410	h	c	c	c	c	c	c	b	c	420	440	450	500
2	450	b	b	b	b	b	400	460	g	g	g	g	g	g	g	500	510	450	b	400	420	s	a	b
3	500	500	b	b	b	350	320	310	450	480	480	c	c	450	430	c	c	c	400	450	b	b	b	b
4	b	b	b	470	b	b	b	b	g	g	b	500	g	500	470	440	430	420	430	450	500	500	480	490
5	460	450	b	b	b	380	470	b	b	b	b	g	g	g	g	g	g	g	400	420	450	450	470	470
6	450	450	450	420	b	b	c	c	c	c	b	b	b	b	b	c	b	b	c	c	500	500	480	b
7	500	500	b	b	b	b	b	530	b	g	b	b	g	g	550	510	500	450	430	380	450	490	490	450
8	450	450	b	400	b	b	g	520	g	g	g	g	g	g	g	500	480	b	b	450	400	440	450	450
9	a	530	480	470	440	b	420	440	g	g	g	g	500	550	500	490	480	450	430	440	s	500	500	b
10	500	470	470	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
11	a	b	b	b	b	b	b	b	b	b	b	h	c	c	b	b	b	b	b	a	a	a	a	b
12	a	b	a	a	b	b	b	b	b	b	b	500	450	b	500	s	530	480	500	s	b	580	s	a
13	b	a	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	g	g	g	b	b	b	b	b	b	b	b	a	a	b
15	a	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
16	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
17	b	c	c	c	c	c	c	c	c	c	c	b	g	g	g	g	g	480	s	s	s	s	a	b
18	b	a	a	a	b	b	b	b	b	g	g	g	g	b	c	430	460	410	b	450	460	490	s	b
19	b	s	450	450	400	c	g	470	g	g	g	g	g	g	420	400	400	c	s	350	a	430	450	470
20	430	s	450	400	360	350	340	s	c	350	s	420	s	c	c	c	c	c	c	s	s	440	s	a
21	a	b	b	b	b	b	460	430	390	c	460	470	b	g	b	440	370	400	s	b	b	b	b	s
22	a	a	a	b	b	b	b	b	b	b	b	b	b	b	b	b	450	450	c	c	c	c	c	c
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	b	b	b	c	c	c	c	c	b	b	b	c	c	c	c	s	b	b
25	b	b	b	b	b	b	b	b	c	c	g	g	g	g	g	g	450	470	440	420	b	b	s	s
26	b	b	a	b	b	b	b	g	g	g	g	g	500	500	500	490	450	450	440	430	430	450	450	450
27	470	450	450	420	400	420	420	g	g	g	g	g	450	g	460	g	410	400	400	390	470	500	450	480
28	450	s	c	480	c	b	g	w	g	g	550	g	b	480	460	500	c	480	s	f	c	c	c	b
29	a	a	b	b	a	s	w	g	g	g	g	g	g	c	g	c	420	c	c	c	c	470	490	470
30	440	460	440	430	410	b	b	g	g	g	g	g	g	g	500	470	460	450	440	s	a	a	a	a
31																								
Median	455	455	u450	u430	u400	u350	440	520	g	g	g	g	g	g	500	500	460	450	430	425	450	480	470	470
No.	12	10	7	9	5	5	12	13	13	15	15	17	16	15	16	15	17	15	10	12	10	14	11	9

36b

Unit 1 km

HOURLY VALUES OF foE OBSERVED DURING NOVEMBER 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				b	b	h	b	b	h	b	b	h	b	b	b	b	b	b	b	b	b			
2				h	b	h	b	b	h	b	b	h	b	h	u340p	u350p	u345p	b	a	b				
3				b	h	a	b	b	h	h	b	b	b	b	b	b	b	b	b	a	b			
4				q	h	h	h	b	h	b	h	b	h	b	b	b	b	h	b	225	a			
5				b	b	235	h	h	b	h	h	h	h	b	b	b	h	b	b	b	b			
6				q	b	u330p	c	c	c	c	b	b	b	b	b	b	b	b	h	b	b	q		
7						h	b	h	h	b	b	b	b	b	b	b	b	b	b	b	195	a	q	
8					b	b	h	h	h	b	b	h	h	h	b	b	b	b	b	b	q			
9					195	b	b	h	b	b	b	b	h	b	b	b	b	b	b	q				
10				h	b	b	h	b	h	b	b	b	h	b	b	b	b	b	b	h	b			
11					b	b	h	b	b	b	b	b	c	c	b	b	b	b	b	b	a			
12				b	b	b	b	b	b	b	b	b	b	b	b	h	b	b	b	b	b			
13					b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c			
14					c	c	c	c	c	c	h	b	h	b	h	b	b	b	b	b	b			
15					b	b	h	h	b	h	b	h	b	b	b	b	b	b	h	h	b			
16					b	b	h	h	h	b	b	h	b	b	b	h	b	b	b	b	b			
17					c	c	c	c	c	c	c	b	h	h	b	b	b	b	b	b	b			
18					b	b	b	b	h	b	b	b	b	b	b	b	b	b	b	b				
19				e 150	b	175	b	h	c	b	h	h	h	b	b	h	h	h	b	b	a	175		
20				u160p	205	h	b	h	b	b	h	h	h	b	h	h	b	b	b	h	b			
21				b	b	b	b	h	h	b	b	b	b	b	b	b	b	b	b	b	b			
22				b	b	b	h	h	b	b	b	b	b	b	b	b	b	b	c	c	c			
23				h	b	b	b	b	b	b	b	b	b	b	h	b	b	h	b	b	b			
24				b	b	b	b	b	b	c	c	c	c	c	b	b	b	b	b	b	b			
25				b	b	b	b	b	c	c	b	b	b	b	b	b	b	b	a	a	b			
26				b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b			
27				a	200	h	a	b	b	b	b	b	b	b	b	b	b	b	a	a	195	150		
28				q	200	b	a	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	
29				a	a	a	a	a	a	a	a	b	b	a	a	a	a	c	a	c	c			
30				q	195	h	b	a	a	b	b	b	a	a	a	a	a	a	a	a	a	a		
31																								
Median				-	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
No.				2	5	3	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2	2		

IPS Form 16

37a

Unit 0.01 Mc

HOURLY VALUES OF fEs OBSERVED DURING NOVEMBER 1956 AT MACQUARIE ISLAND

Sweep: 1.0 - 13.0 Mc/s in 1m 55s 157.5°E Mean Time

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	35	34	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	22	b	b
2	25	b	b	b	h	b	b	b	b	b	b	b	b	b	b	b	b	b	26	b	b	26	66	b
3	25	e	26	b	b	25	b	h	b	h	h	b	b	b	h	h	b	b	b	65	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	g	25	25	21	25
5	e	e	b	h	b	g	b	b	b	b	b	b	b	b	b	b	b	b	b	h	b	e	e	e
6	e	e	e	e	b	25	c	c	c	c	b	b	b	b	b	b	b	b	b	b	b	e	58	b
7	20	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e	64	25	e
8	e	e	b	e	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	h	b	e	e	20
9	21	21	e	e	e	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	e	b	21	b
10	20	e	e	b	b	b	h	b	b	b	b	b	b	b	b	b	h	h	b	b	b	b	b	b
11	65	b	b	b	b	b	b	b	b	b	b	b	c	c	b	b	b	b	b	68	d 77c	74	76	b
12	57	b	58	65	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	21	21	58f
13	b	76	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	b*	b	b	b	70	58	b
15	65	b	b	b	h	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
16	b	b	b	b	b	b	b	h	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
17	b	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b	21	52	b
18	b	55	68	57	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	55	b	b	37	b
19	b	b	21	20	b	e	b	b	21	b	b	b	b	b	b	b	b	b	b	b	74	e	d 21c	d 21c
20	d 21c	d 21c	d 21c	20	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	h	b	d 21c	d 21c	67
21	77	b	b	b	b	h	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
22	75	58	68	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
24	b	b	b	b	b	b	h	b	b	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b
25	b	b	b	b	b	b	b	b	c	c	b	b	b	b	b	b	b	b	50	48	b	b	21	58
26	b	b	55	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	d 21c	65	d 21c
27	d 21c	d 21c	d 21c	d 21c	20	b	50	b	b	b	b	b	59	b	b	b	b	b	d 21c	d 21c	20	20	20	21
28	e	d 21c	20	17	d 21c	b	29	b	b	b	b	b	b	h	b	b	b	b	b	b	c	c	c	b
29	56	55	d 21c	d 21c	50	d 21c	30	d 21c	33	53	d 21c	b	b	34	32	32	d 21c	c	d 21c	c	c	21f	20	d 21c
30	e	e	e	20	d 21c	b	b	35	36	b	b	b	35	46	33	75	d 21c	71	48	56	36	55	49	55
31																								
Median	25	21	d 21	20	d 21	d 21													26	56	25	21	25	25
No.	17	12	14	11	5	5	3	2	3	1	1	0	2	2	2	2	2	1	5	6	7	15	17	9

IPS Form 16

37b

Unit 0.1 Mc