COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF EXTERNAL AFFAIRS

AUSTRALIAN NATIONAL ANTARCTIC RESEARCH EXPEDITION

INTERIM REPORTS

6

Hourly Measurements of Ionospheric Characteristics Macquarie Island, 1951

By

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INTRODUCTION

Routine h'f ionospheric soundings were commenced in June 1950 at Macquarie Island (Geographic Latitude 54° 29' S, Longitude 158° 58' E, Geomagnetic Latitude 61° S, Longitude 243° E). Hourly values for 1950 were the subject of a report by Cohen (1952). The following report presents hourly values and graphs of ionospheric characteristics observed during 1951.

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 1.5 kw 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 50 km 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 and the other for receiving, rigged at right angles, with 1100 ohm terminating resistors, are supported on a single 70 foot guyed steel mast.

The characteristics published in this report are those recommended at the Fifth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Stockholm, 1948, and later by Commission 111 of U.R.S.I. at its 1950 Assembly in Zurich:-

f°F2, f°F1, f°E — ordinary-wave critical frequency for the F2, F1 and E layers respectively

fEs — highest frequency on which echoes of the sporadic type are observed from the lower part of the E layer

h'F2, h'F1, h'E — minimum virtual height on the ordinary-wave branch for the F2, F1 and E layers respectively

h'Es — minimum virtual height of sporadic E echoes

hpF2 — virtual height of the F2 layer measured on the ordinary-wave branch at a frequency equal to 0.834 f°F2

(M3000)F2, (M3000)F1 — maximum usable frequency factor for a path of 3000 km for transmission by the F2 and F1 layers respectively

Monthly median values of f°F2, (M3000)F2, f°F1 and (M3000)F1 are published in regular bulletins of the Ionospheric Prediction Service of the Commonwealth Observatory.

The following descriptive symbols have been used in the tabulation:-

a — characteristic not measurable because of blanketing by Es

b — characteristic not measurable because of increased absorption of any type

c — characteristic not observed because of either partially or completely lost records

d — characteristic at a frequency higher than the normal upper limit of the equipment; also, when followed by a numerical value, d has the meaning of "greater than".

o	characteristic at a frequency lower than the normal lower limit of the equipment; also, when followed by a numerical value, o has the meaning of "less than".
f	spread echoes present
g	(a) F2 layer critical frequency equal to or less than the F1 layer critical frequency (b) measurement of hpF2 prevented by retardation in the F1 layer, the F2 layer critical frequency being close to that of the F1 layer. The symbol thus used is included in the median count as a value greater than the median (c) used on Es tabulation sheets when no Es echoes are observed though regular E layer echoes are present
h	stratification observed within the layer
j	ordinary-wave characteristic deduced from measured extraordinary-wave characteristic
k	ionospheric storm in progress
l	(a) critical frequency or M3000 for F1 layer omitted or doubtful because no definite or abrupt change in slope of the H'f curve is observed either for the first reflection or any of the multiples (b) minimum virtual height for the F2 layer omitted because the F2 layer trace is continuous with the F1 layer trace and without a point of zero slope
n	nature of the observation is such that it is not possible for the characteristic to be interpreted
p	trace extrapolated to critical frequency
q	distinct F1 layer not present
s	characteristic obscured by interference or by atmospherics
v	trace forked near critical frequency
w	characteristic at a height greater than the normal upper limit of equipment
y	used on Es tabulation sheets when Es trace is intermittent in frequency range
z	third component of h'f trace for layer is observed
( )	individual observed values thus enclosed are considered doubtful
*	no median given because of too few values
**	median value of fEs less than the median value of f°E

SUMMARY.

The monthly median values of the critical frequencies, heights and transmission factors for the normal layers followed the expected daily and seasonal trends for a medium to high latitude station. During the winter months the F1 layer was seldom seen.

Polar blackouts were quite common at night, particularly during the equinox and to a lesser degree during the summer months. For many months it was impossible to obtain median values of the F2-layer characteristics for the several hours around midnight owing to the severity and the regularity of the blackouts. On the other hand, echoes from the sporadic-E layer were more common at night than during the day, and were frequently observed intermittently during a polar blackout when there were no F2-layer echoes. Sporadic-E layer echoes were not associated in the same way with daylight fades.

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 of results. Special thanks are due to Mrs. M. Harrison and the I.P.S. Publications Section for the preparation of the results for publication.

The project was planned and supervised by Mr. G. Major, Ionospheric Research Officer, A.N.A.R.E. The recorder was installed by Mr. D.S. Cohen in June 1950.

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

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GRAPHICAL REPRESENTATION

OF

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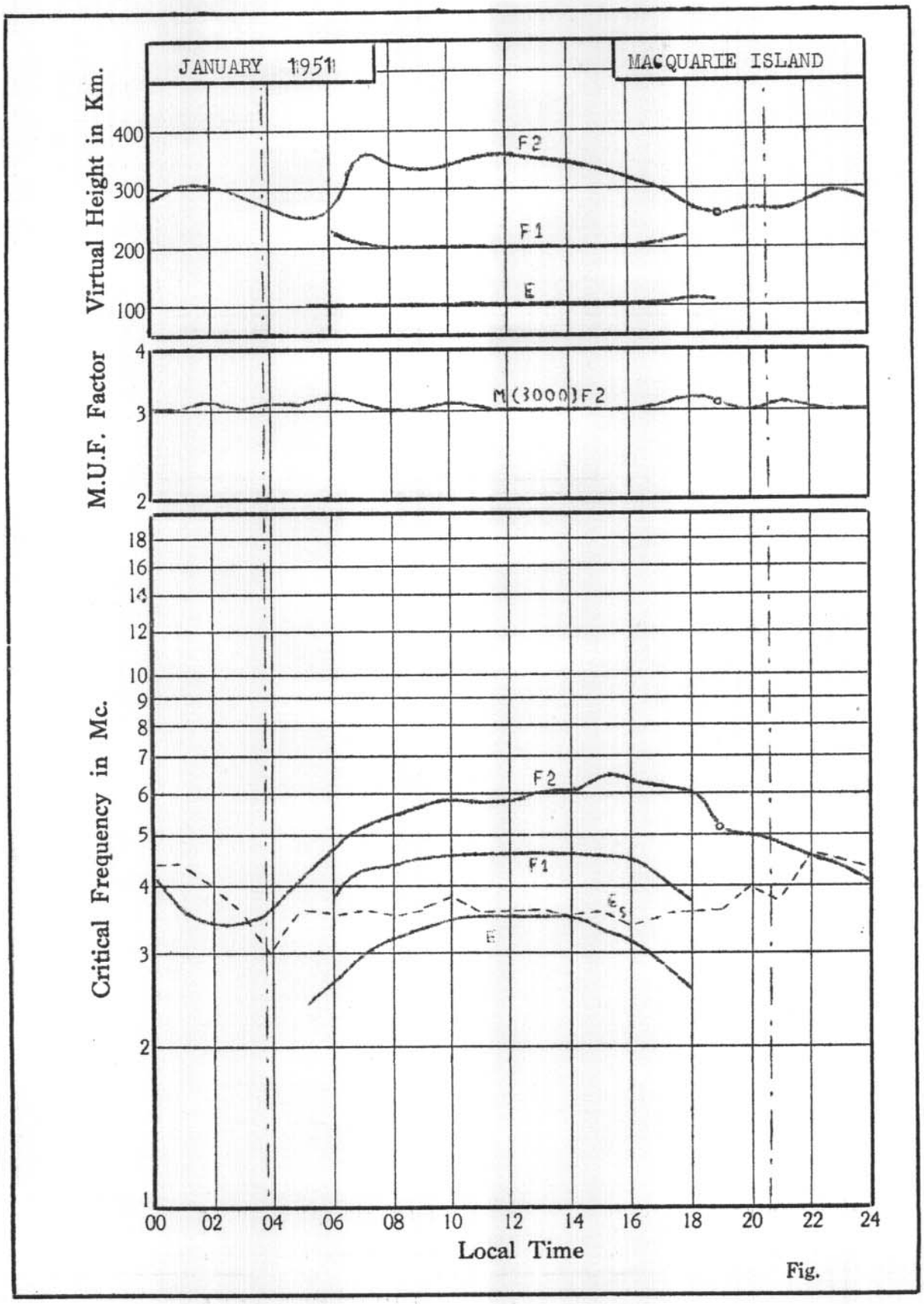

Fig.

GRAPHICAL REPRESENTATION

OF

IONOSPHERIC CHARACTERISTICS

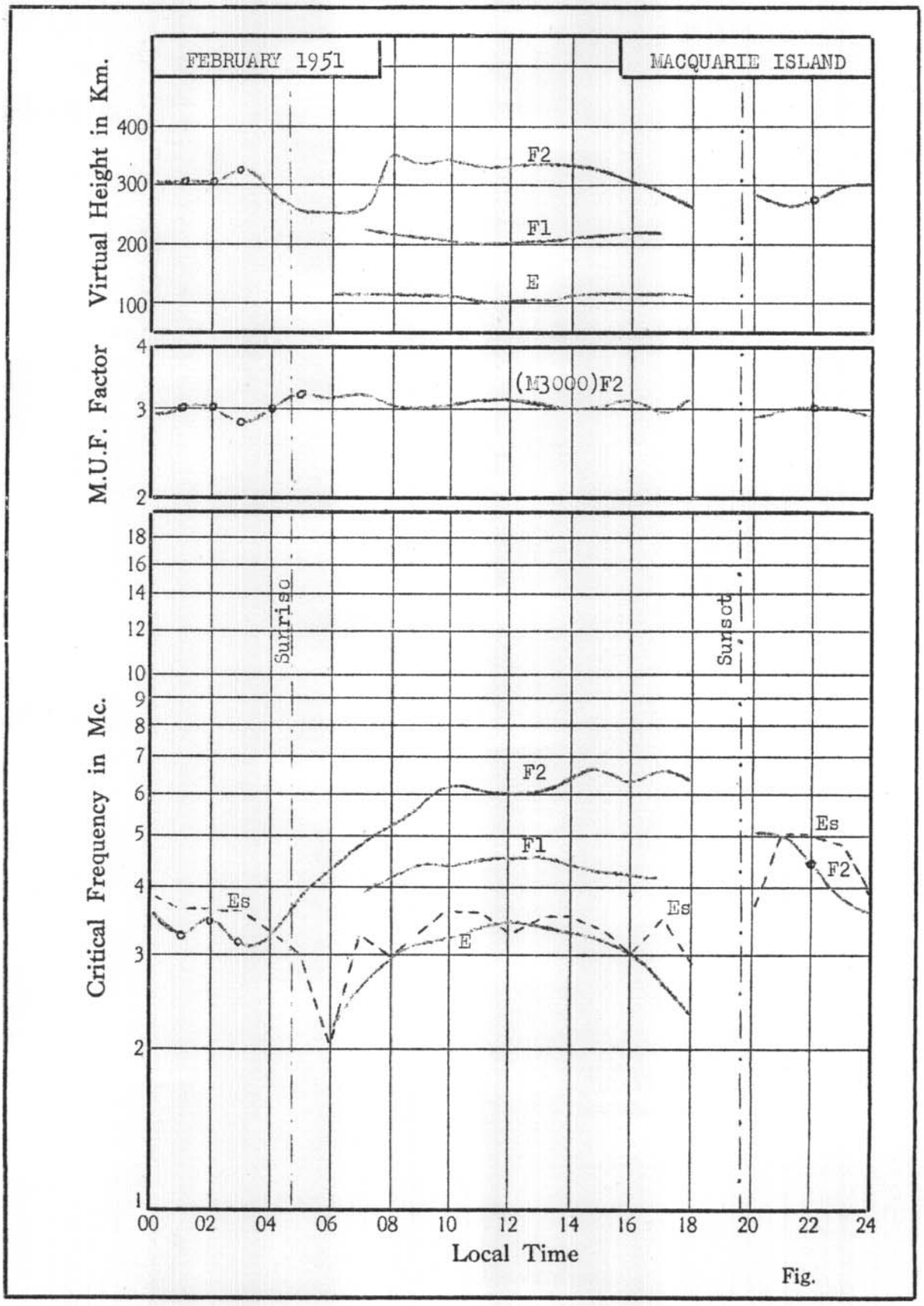

Fig.

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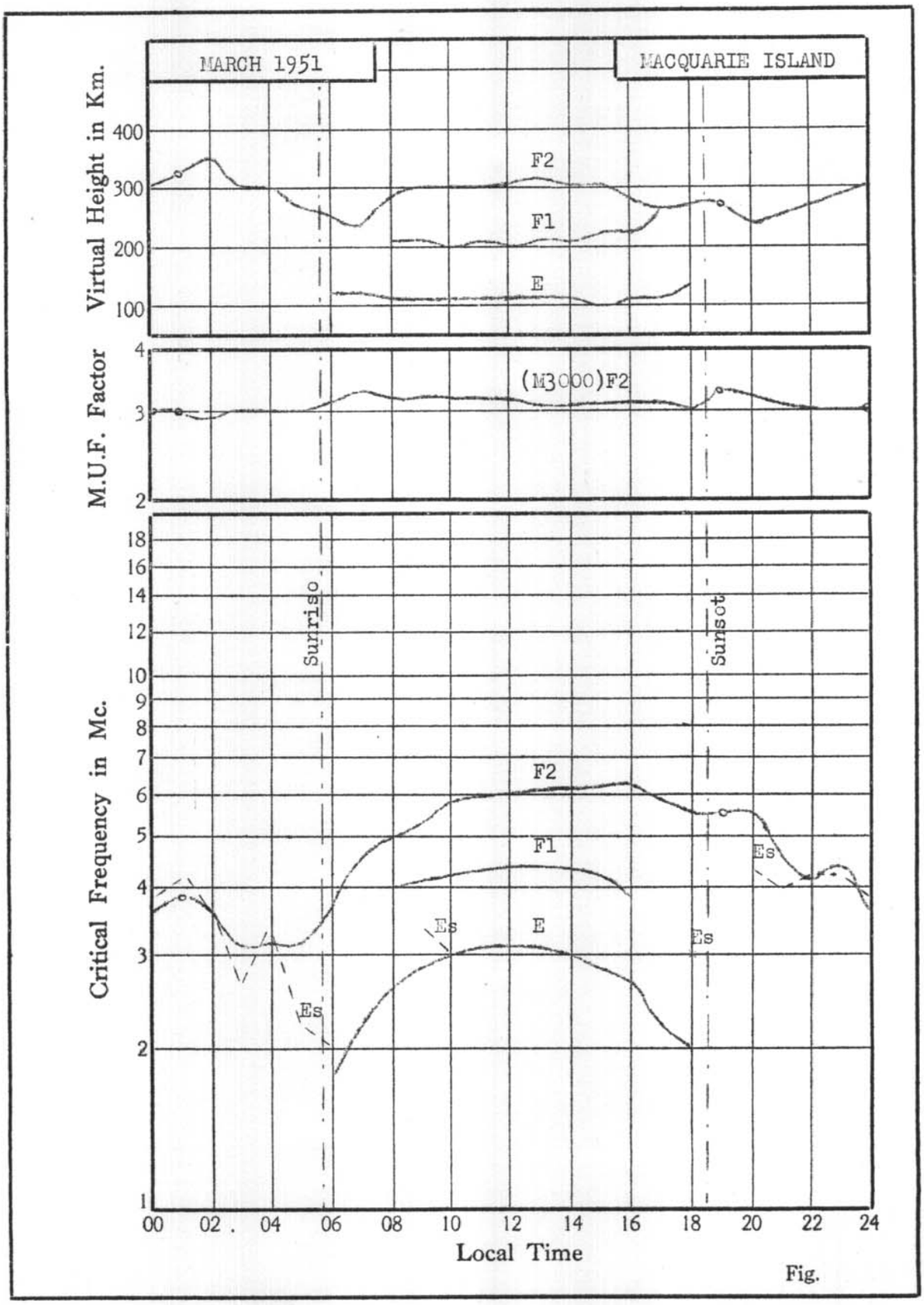

Fig.

GRAPHICAL REPRESENTATION

OF

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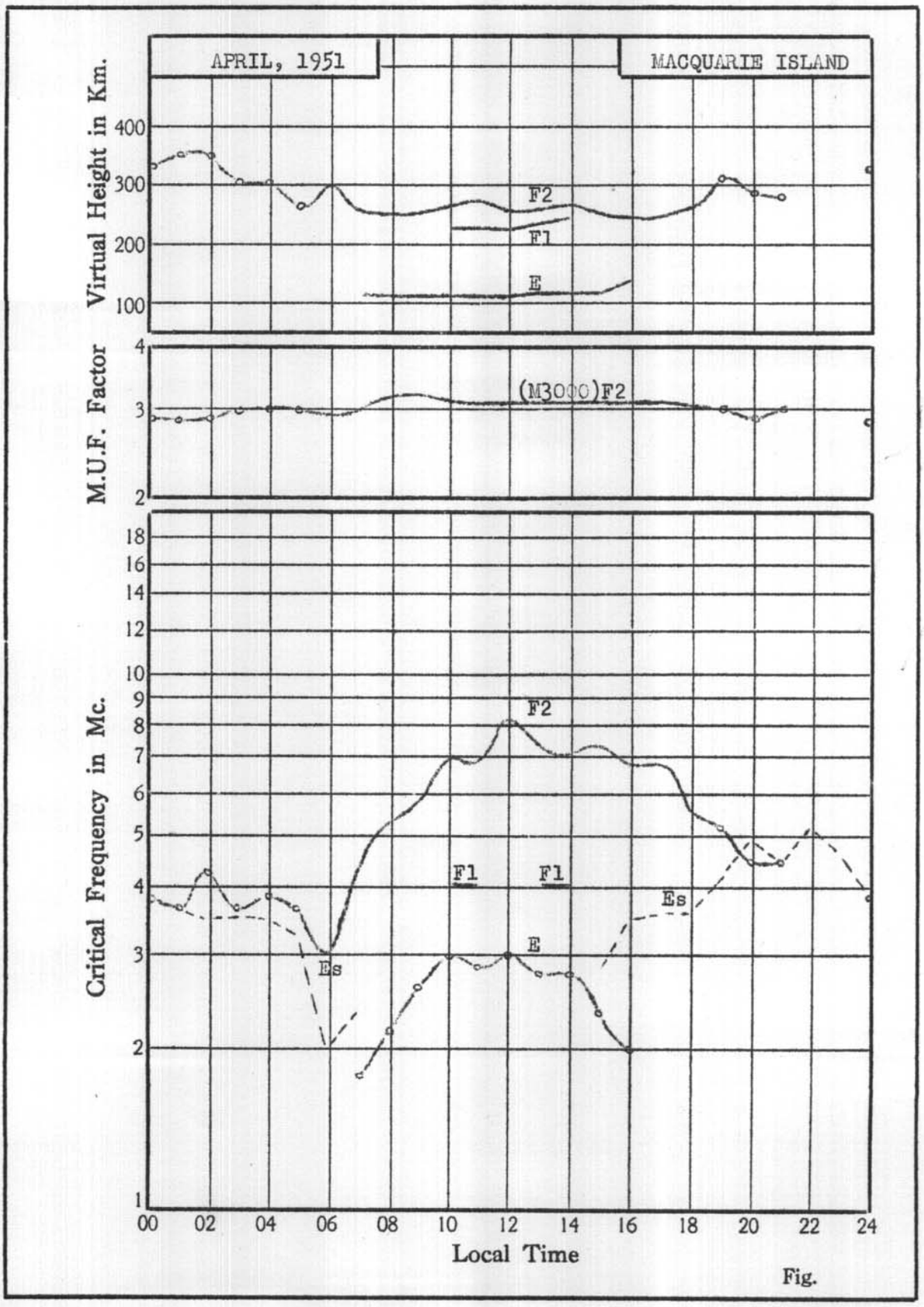

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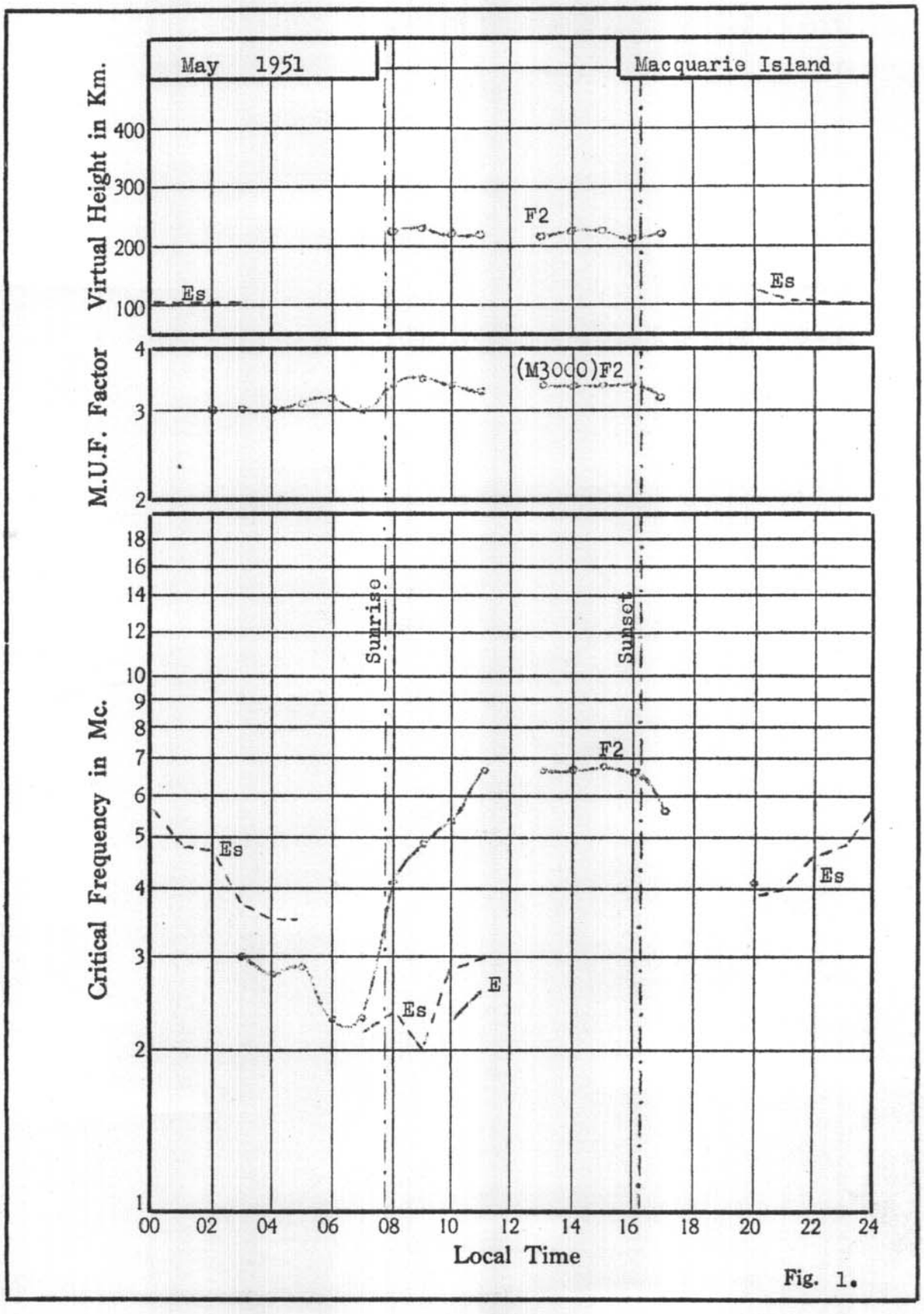

Fig. 1.

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OF

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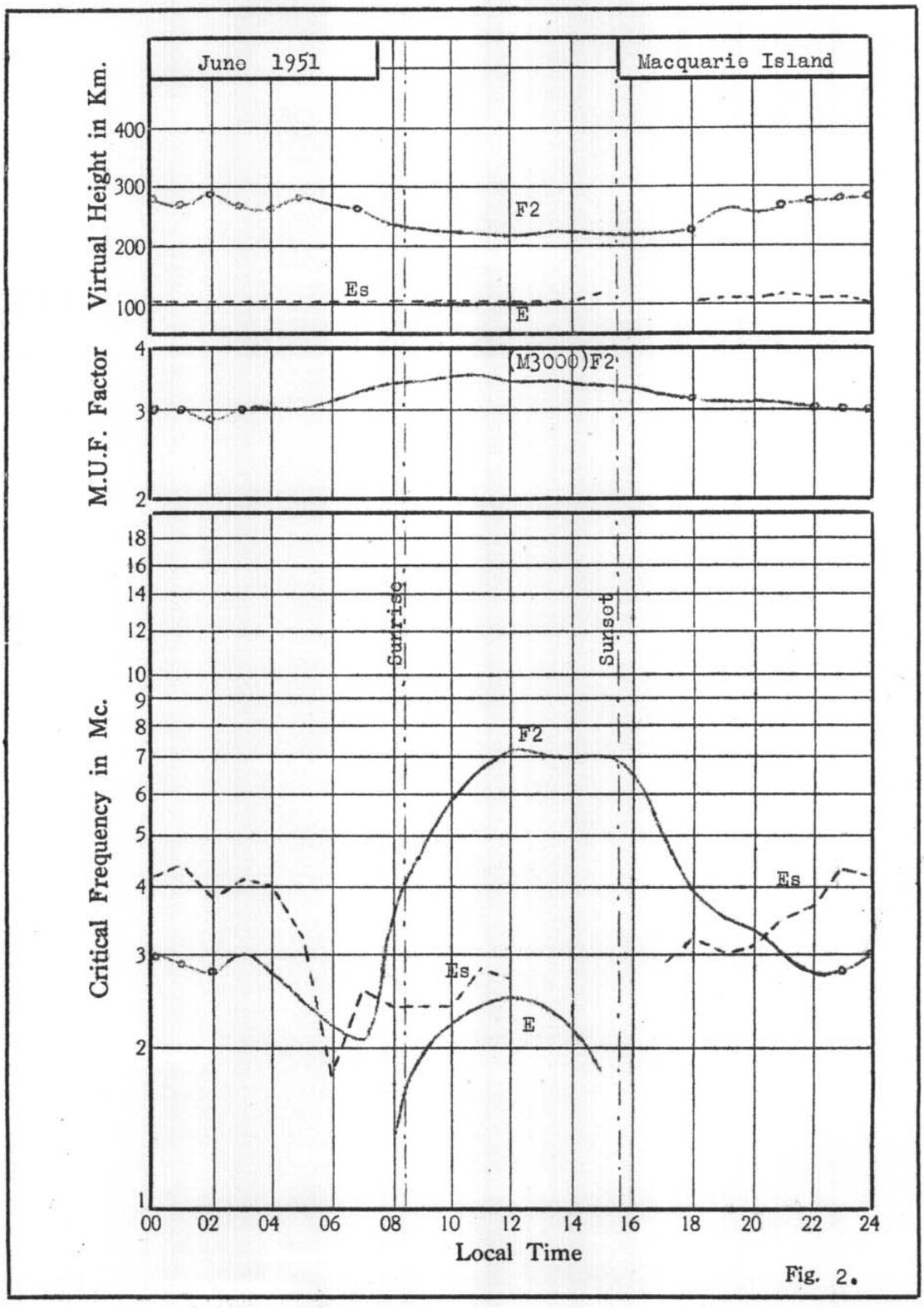

Fig. 2.

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OF

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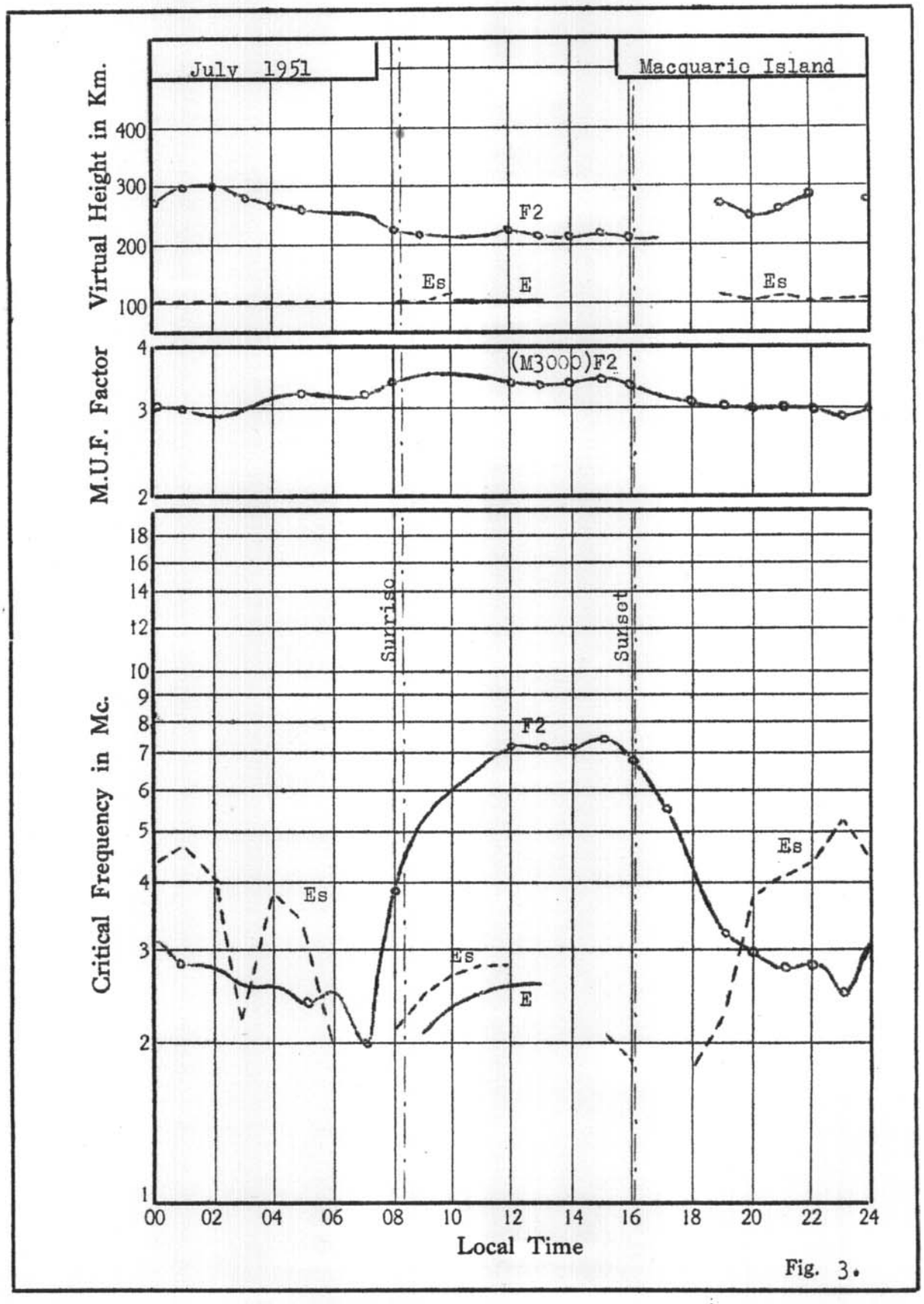

Fig. 3.

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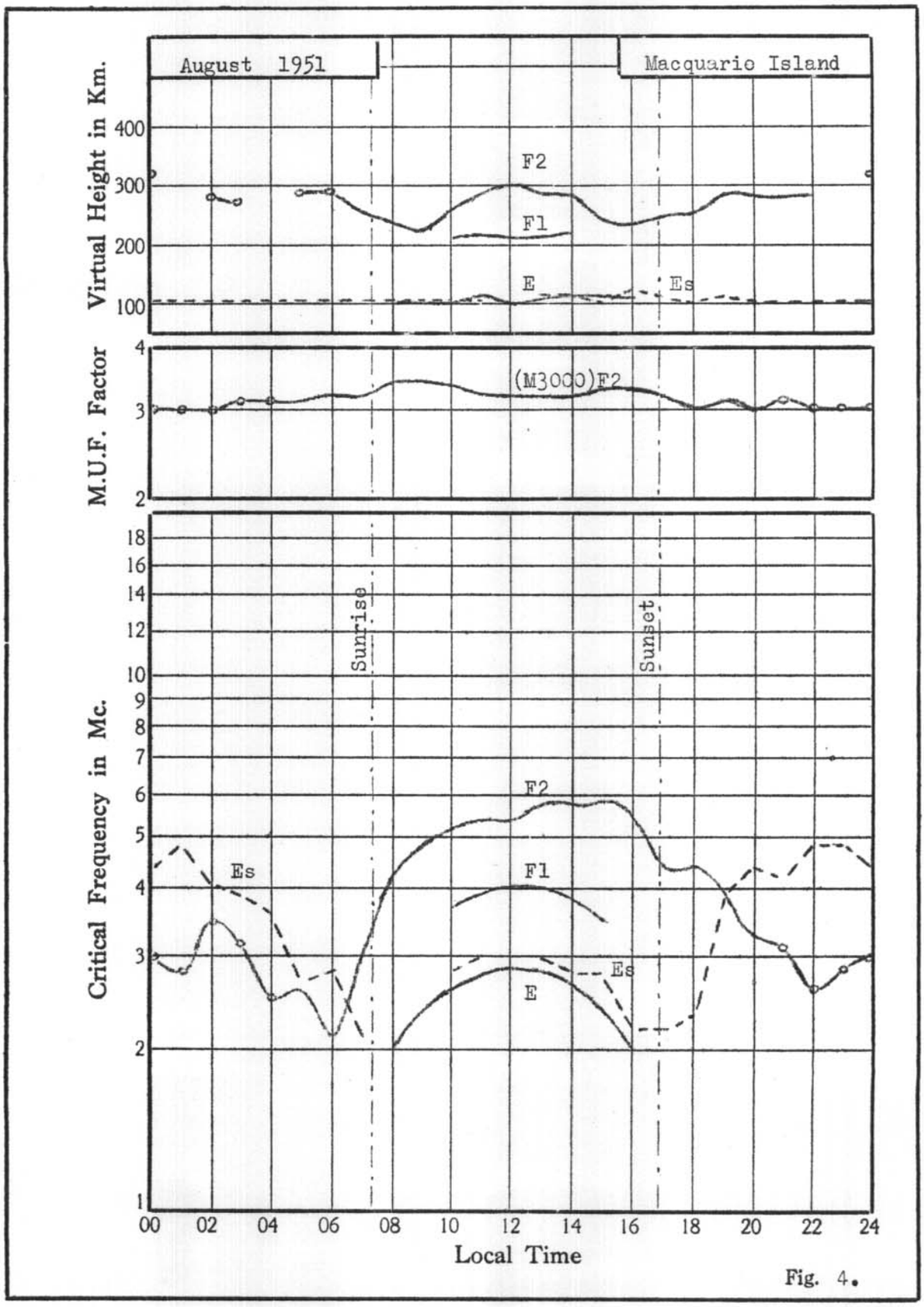

Fig. 4.

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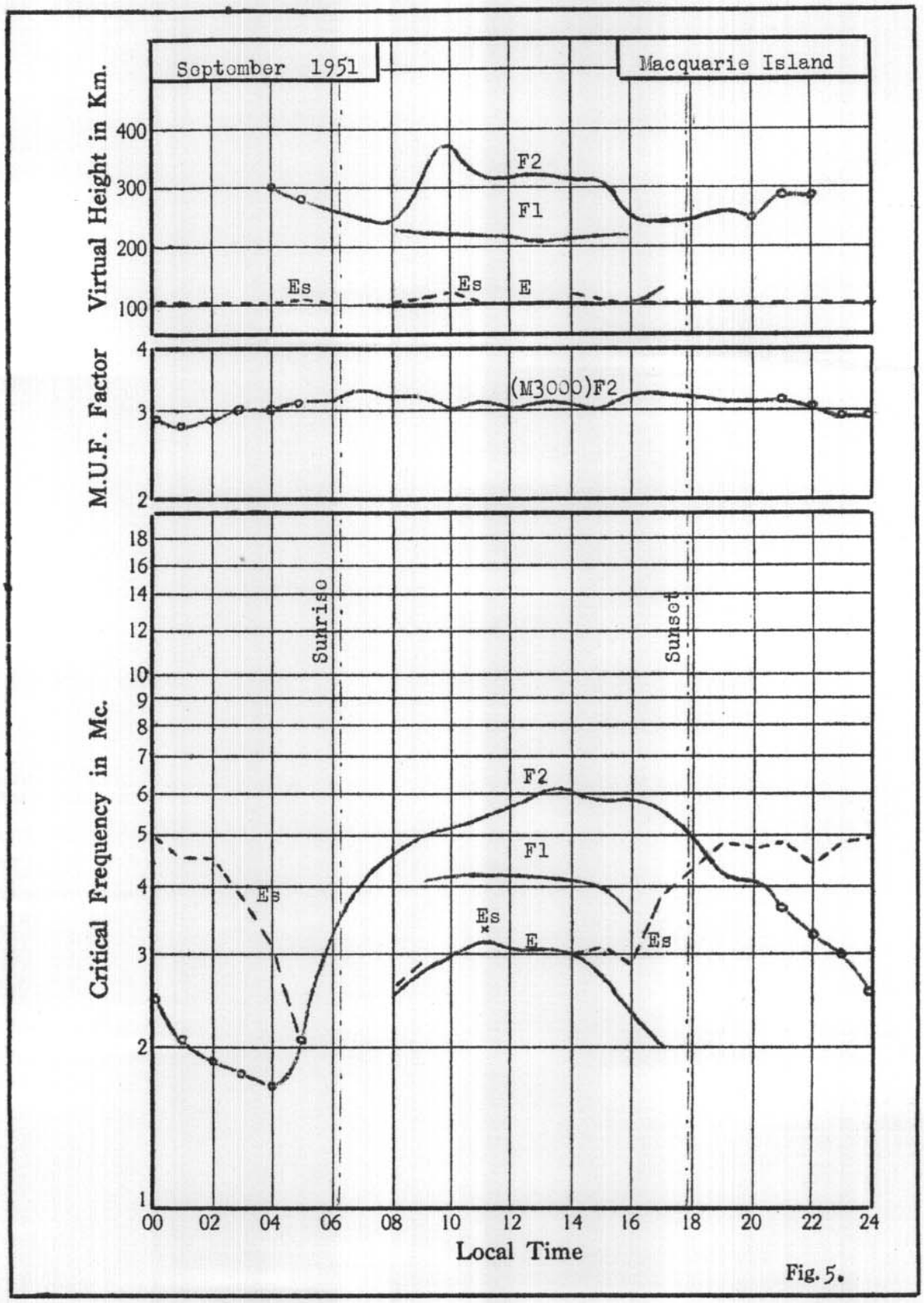

Fig. 5.

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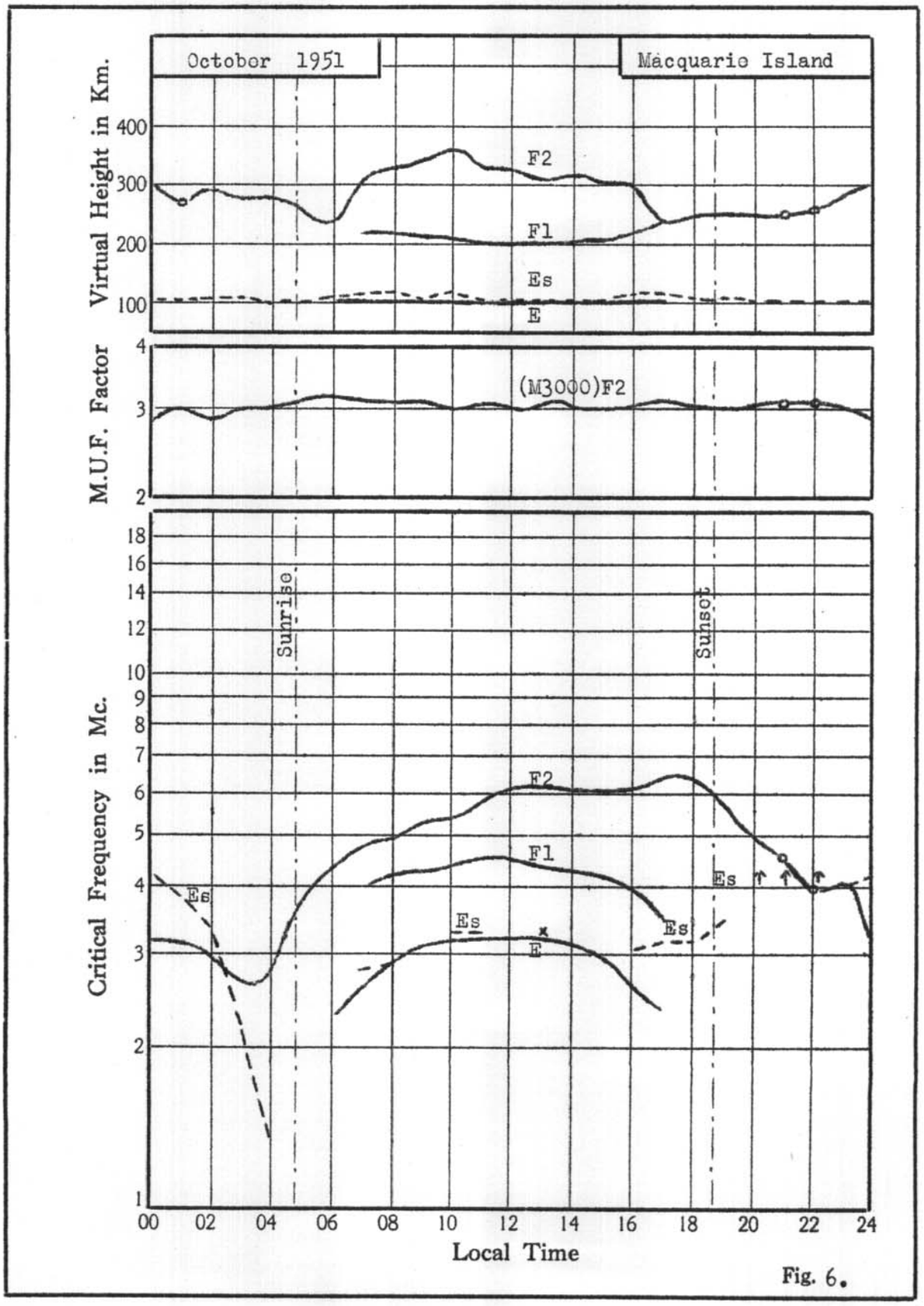

Fig. 6.

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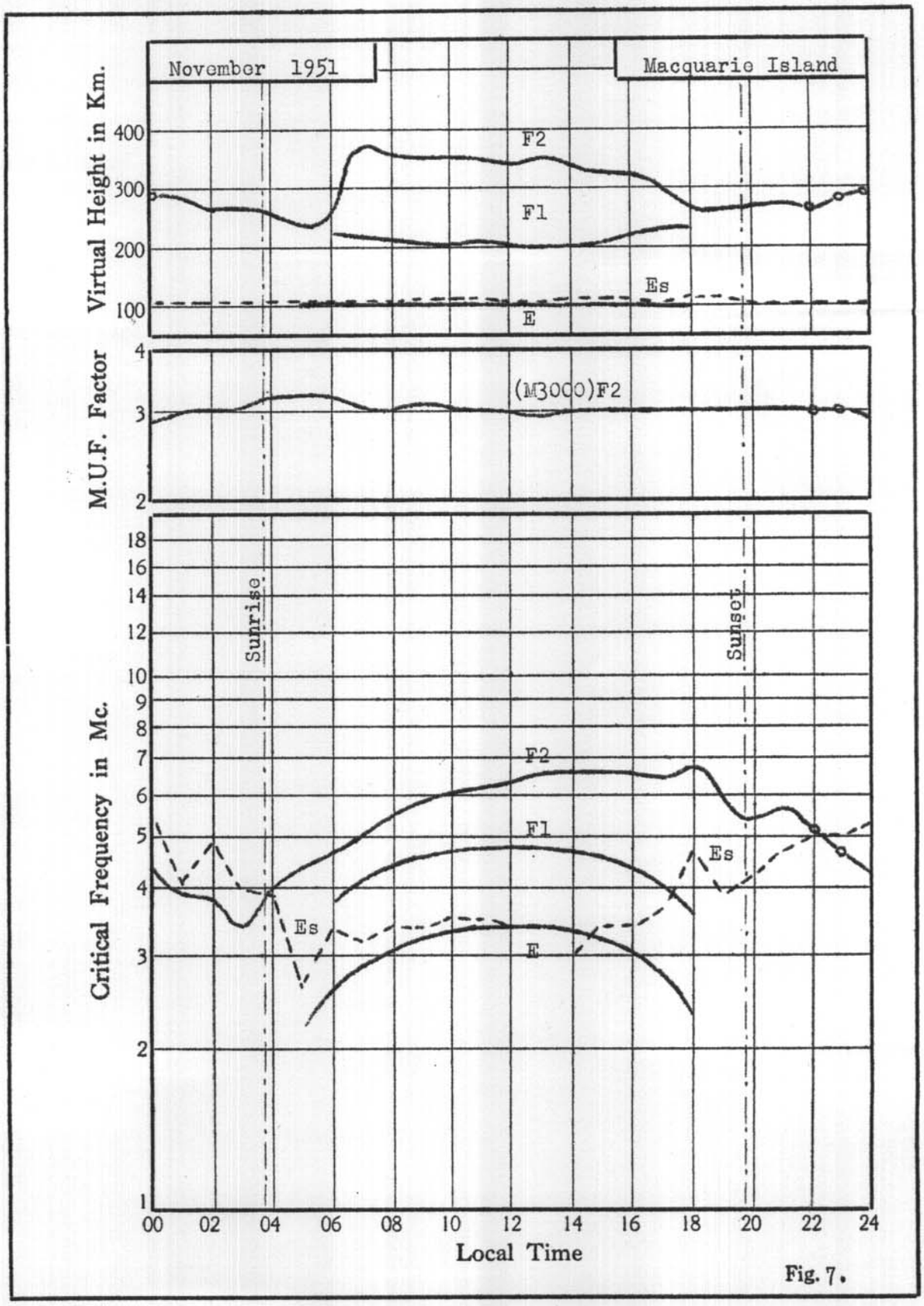

Fig. 7.

GRAPHICAL REPRESENTATION

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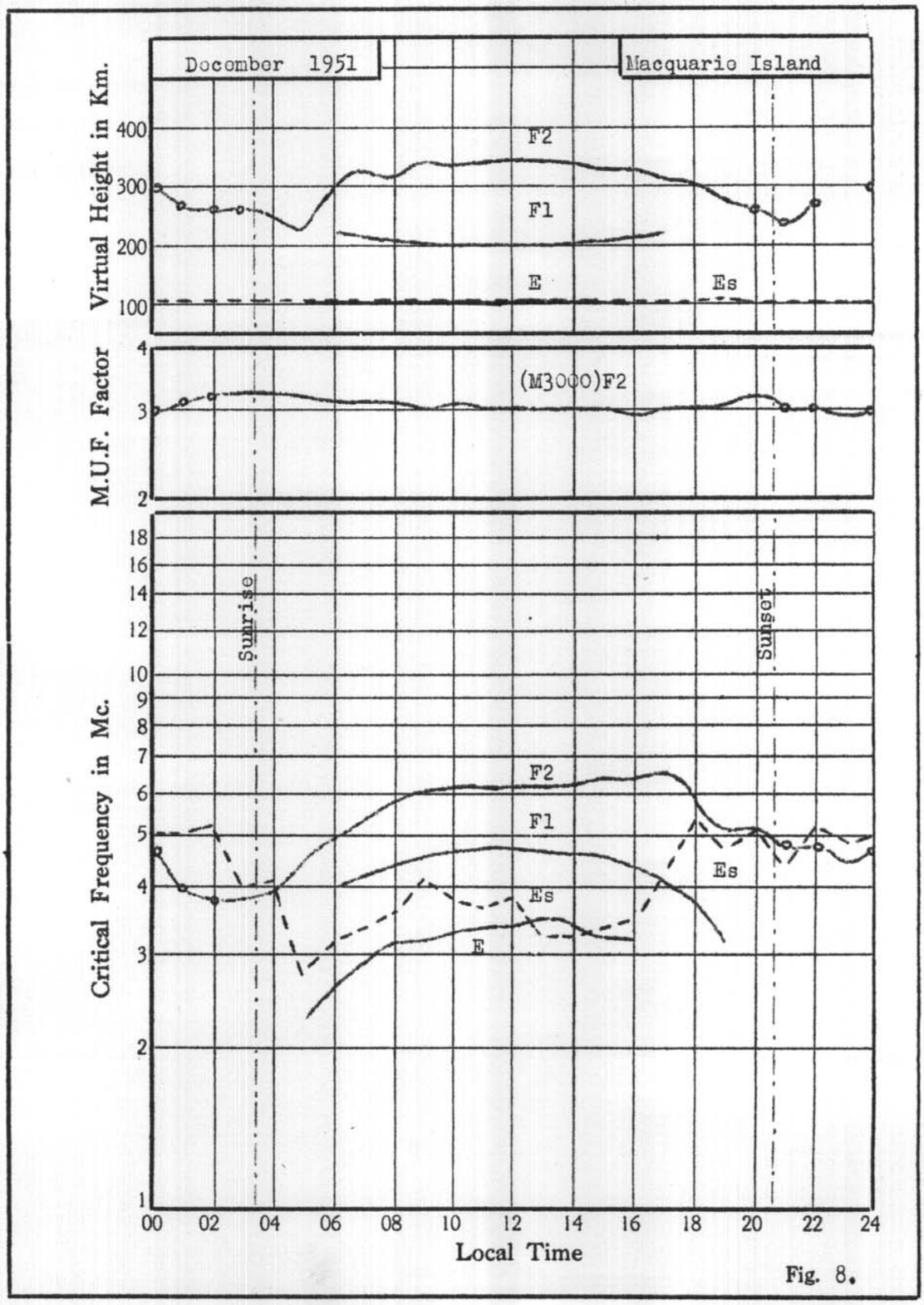


Fig. 8.

HOURLY VALUES OF $f^{o}F2$ OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	6.0f	4.4f	3.3f	3.6f	4.9f	5.4	5.8	5.9	6.1	5.8	6.2	7.0
2	b	b	b	3.4	3.4f	3.7f	4.7	5.3	5.3	5.8f	5.8	5.5f
3	b	b	b	3.3	3.5f	4.0f	4.4f	5.2	5.5	5.7	6.1	5.7
4	b	3.6f	3.4f	3.6f	4.0	4.6	5.4	5.8	6.2	5.7	6.5	6.6
5	c	c	c	c	c	c	c	c	c	c	c	c
6	3.8f	3.6f	3.0f	3.4f	b	4.0f	5.0	5.3f	5.3f	c	6.0	6.0
7	4.4f	3.6f	3.6f	b	4.1f	5.5	5.7	6.3	7.0	6.5	c	c
8	(6.0f)	(5.1f)	(4.5f)	(3.7f)	(4.5f)	(5.0f)	(5.4f)	5.7	6.3	6.2	6.0	6.1
9	b	b	4.5f	4.6f	4.6f	5.2	5.4	5.4	(5.5)	6.1f	6.0	6.0
10	4.8f	4.5f	c	3.5f	4.3f	4.5	4.4	5.2	5.8	5.9	6.2	6.4
11	3.5f	(3.5f)	(3.4f)	b	b	b	3.7f	g	g	g	4.6	g
12	(2.8f)	(2.6f)	(2.3f)	(2.5f)	(3.4f)	(3.5f)	(3.6f)	g	b	b	4.2	g
13	b	b	b	2.6f	3.4f	3.6f	4.3	4.7	g	5.2	5.5	5.5
14	3.4f	2.7f	2.6f	3.0	3.6	b	b	b	4.5f	g	g	g
15	c	c	c	c	c	c	c	c	c	c	c	5.0
16	3.7f	b	b	2.5f	3.1	3.6	3.6	4.0	b	b	g	b
17	b	2.5	b	b	b	3.5f	4.4	b	b	b	b	5.0
18	3.0f	b	2.5f	2.9f	3.5	4.2	(4.6f)	4.8	5.3	5.5	5.8	5.7
19	b	b	f	3.3	3.6	4.4	5.3	5.4	5.8	6.0	5.8	6.1
20	b	3.6f	3.4f	3.0f	3.2	3.6	4.1	4.3	5.1f	5.3f	5.5f	5.0f
21	b	b	b	3.4f	3.6f	4.0f	5.0	5.0	5.3	5.6	5.3	5.7
22	f	b	b	b	b	b	4.6f	4.7f	4.4f	4.6f	c	g
23	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
25	5.4f	5.4f	5.0f	3.6f	3.7	4.1f	4.7	5.1	5.4f	5.9	6.4	6.6
26	b	3.7f	4.5f	4.0f	4.2f	4.5	5.1	5.7	6.1	6.6	7.0	7.0
27	5.0f	b	b	b	b	b	b	g	g	g	5.1	5.6f
28	c	c	c	c	c	c	c	c	c	c	c	c
29	b	b	b	3.7f	b	b	b	4.9f	b	5.9f	6.0f	6.0
30	4.8	b	3.5f	3.6f	3.5f	5.0	5.0f	5.8	5.8	b	6.2	6.0
31	3.7f	3.6f	3.3f	b	b	3.8f	b	5.1f	5.1f	5.2f	5.6f	5.6f
Median	4.1f	3.6f	3.4f	3.4f	3.6f	4.1	-	5.2	5.4	5.7	5.8	5.7
No.	14	14	15	20	19	21	22	24	22	21	23	25

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

HOURLY VALUES OF f°F2 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	6.6	7.0	7.0	6.8	6.8f	6.1f	5.9	c	5.5f	4.5f	5.4f	a
2	5.7f	6.1	6.1	6.1	5.8	6.1f	5.9	[5.8]	5.8	5.4f	b	b
3	5.8	5.7	6.0	6.3	c	c	c	c	c	c	c	c
4	6.5	6.8	6.6	7.1	7.0	6.2	6.1	c	6.4	c	c	c
5	c	c	c	c	6.1	7.0f	6.2f	c	4.5f	c	c	4.5
6	6.0	6.0	5.8f	6.1f	6.1	6.5	6.1	5.9	5.9	5.4	5.5f	4.5f
7	6.5	6.6	6.6	6.6	6.8	6.8	6.8	[.0f]	5.8f	(6.0f)	(6.0f)	(6.0f)
8	6.0	6.0	6.2	6.1	7.5	6.5	6.5	(5.0f)	(5.4f)	[5.3f]	b	b
9	6.5	7.1	6.0	6.5	6.5	6.6	6.0f	c	4.6	[3.7f]	4.0f	4.5f
10	6.4	5.7	6.0	6.0	5.8	6.2	6.2	c	6.0f	(5.0f)	(4.5f)	3.7f
11	g	g	4.8f	4.7	5.3	5.4f	5.6f	c	4.0f	b	b	(3.1f)
12	g	g	g	c	5.0	4.5f	f	b	b	b	b	b
13	5.5f	6.0	6.4	6.4	6.5	4.2	c	c	4.5	4.3	3.9	3.5
14	4.8f	c	c	c	c	c	c	c	c	c	c	c
15	4.9	4.8f	5.1f	5.3f	5.4f	5.2f	5.4f	(4.1f)	4.0f	3.8f	b	b
16	4.6	b	b	4.4f	4.4f	4.7f	[4.8]	[4.8]	4.4	b	b	b
17	5.0	5.2	5.4	5.4	5.8	5.5f	c	4.9f	5.0f	3.9f	3.4f	3.6f
18	5.8	5.6	5.8	c	5.8	5.8	[5.6]	b	5.0	5.0f	5.0f	4.5f
19	6.1	5.9	6.4	6.7	c	c	c	c	c	b	b	b
20	b	5.0	b	5.0	5.0	5.0f	4.8f	c	4.5f	4.5f	3.6f	3.6f
21	5.7	6.2	5.8	6.0	5.8	6.0	b	c	6.2f	4.6f	3.6f	3.4
22	g	5.6f	5.4f	5.3	c	c	c	c	c	c	c	c
23	c	c	c	5.8	5.2	c	c	c	c	c	b	b
24	c	5.8	5.8	6.4	6.5	7.5	7.5	5.2f	5.0f	4.6f	4.4f	b
25	6.7	6.5	6.5	6.7	7.0	7.0	7.4	c	5.5f	5.4f	b	5.4f
26	7.1	7.0	7.1	7.3	7.0	7.1	7.4	c	5.0f	5.1f	5.1f	4.3f
27	5.4f	5.6f	6.0f	7.5f	7.0f	5.7f	5.0f	c	5.0f	b	b	b
28	c	6.6	7.0	7.5f	7.5f	7.0f	6.2f	b	5.4f	b	b	b
29	6.0	6.1	6.4	7.0	7.0	7.0	6.8	c	5.4	b	b	b
30	6.7	6.8	6.9	6.5	6.8	6.8	c	c	c	b	5.0f	5.5
31	5.6f	5.8	6.4	b	c	c	c	c	c	c	b	b
Median	5.8	6.0	6.0	6.4	6.3	6.2	6.1	(5.1)	5.0f	4.8f	4.5f	4.4f
No.	26	27	26	26	26	25	20	8	23	16	13	14

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND f°F2, JANUARY 1951

HOURLY VALUES OF f°F1 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	q	1	4.4	4.5	4.6	4.8	4.7	4.9	4.7	4.7	4.8	4.6	4.5	4.2	c
2	q	4.3	4.2	4.5	4.4	4.6	4.9	4.8	4.7	4.6	4.6	4.5	4.3	4.1	c
3	q	q	4.3	4.4	4.7	4.6	4.7	4.7	4.7	4.5	4.3	c	c	c	c
4	1	4.3	4.5	4.6	4.5	4.7	4.8	5.0	5.0	4.8	4.5	4.5	4.0	3.6	c
5	c	c	c	c	c	c	c	c	c	c	c	4.5	q	q	c
6	q	3.9	4.3f	4.4f	c	4.6	4.7	4.7	4.6	4.7f	4.6f	4.5f	4.3	3.9	q
7	q	q	4.5	4.6	4.7	c	c	4.9	4.9	4.6	4.5	4.4	4.3	3.7	c
8	q	q	4.3	4.5	4.6	4.8	4.8	4.5	4.7	4.7	4.5	4.5	4.2	1	q
9	q	1	4.4	4.5	4.6	4.5	4.8	4.8	4.6	4.5	4.5	4.4	q	q	c
10	q	q	4.4	4.4	4.6	4.5	4.8	4.6	4.6	4.5	4.5	4.5	4.3	1	c
11	b	q	3.9f	4.2	4.3	4.3	4.4	4.4	4.4	4.4	4.3	4.2	4.1f	3.6	c
12	q	q	(3.7f)	b	b	3.5	4.4	4.4	4.5	4.3	c	a	4.3f	a	b
13	q	3.8	4.2	4.3	4.4	4.5	4.6	4.5f	4.4	4.4	4.3	4.2	a	c	c
14	b	b	b	4.1f	4.3	4.3	4.2f	4.3	c	c	c	c	c	c	c
15	c	c	c	c	c	c	4.2	4.3	4.1	4.3	4.2	4.0	3.8	3.7	q
16	q	q	3.8	b	b	4.2	b	4.2	4.3	b	4.2	3.9	3.8	3.8	c
17	q	3.9	b	b	b	b	4.2	4.3	4.3	4.3	4.3	4.0	3.8	c	q
18	q	(3.9)	4.0	4.3	4.5	4.4	4.5	4.5	4.5	4.4	c	4.1	3.6	c	b
19	q	4.1	4.2	4.4	4.5	4.5	4.5	4.6	4.5	4.4	4.2	c	c	c	c
20	q	q	q	4.2	4.3f	4.3	4.2f	4.3	4.3	4.3	4.4	4.2	4.2f	q	c
21	q	a	4.1f	4.3	4.3	4.4	4.6	4.5	4.6	4.5	4.4	4.3	4.0	b	c
22	b	3.7f	3.8	3.8	4.1f	c	4.3f	4.4f	4.4f	4.3f	4.2	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	4.4	4.2	c	c	c
24	c	c	c	c	c	c	c	c	4.6	4.4	4.5	4.5	4.5	1	q
25	q	q	q	4.4	4.6	4.5	4.8	4.8	4.7	4.5	4.7	4.5	a	1	c
26	q	q	q	4.5	4.7	4.8	5.0	4.8	4.9	4.8	4.7	4.5	4.2	q	c
27	b	3.8f	4.0	4.2	4.4	4.5	4.6f	4.7f	4.4f	4.4f	4.5f	4.5	q	a	c
28	c	c	c	c	c	c	c	c	4.8	4.8	4.7	4.6	4.5	q	b
29	b	b	4.4f	b	4.5f	4.9f	4.9	4.8	4.9	4.7	4.7	4.5	4.5	1	c
30	q	q	4.3	4.6	b	4.9	b	5.0	4.7	4.9	4.6	4.6	4.5	c	c
31	q	b	4.3	4.4	4.4	4.5f	4.6f	4.6f	4.6	b	b	c	c	c	c
Median	*	3.9	4.3	4.4	4.5	4.5	4.6	4.6	4.6	4.6	4.5	4.5	4.2	3.8	*
No.		9	21	22	21	23	24	27	28	26	26	25	20	8	

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND f°F1, JANUARY 1951

HOURLY VALUES OF foE OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	a	2.3f	2.6f	2.9f	3.1	3.2	3.4	a	3.5f	3.5	3.5	3.4	3.4	3.2	3.0	c
2	a	2.6f	3.0	2.9	3.1	3.4	3.3	a	3.6	3.5	3.5	3.5	3.3	3.1	3.1	c
3	a	2.4	b	b	3.2	3.2	3.4	3.6	3.6	3.6	3.5	a	c	c	c	c
4	2.2	2.5	2.6	3.1	3.2	3.5	3.6	3.6	3.7	3.6	3.5	b	3.2	2.8	2.6	c
5	c	c	c	c	c	c	c	c	c	c	c	c	3.1	3.0	a	c
6	a	a	2.5	3.0f	3.1	c	a	3.6f	3.5f	3.5f	3.5f	3.5	3.2f	3.0	2.6	a
7	a	2.2	2.6	3.2	3.3	3.5	c	c	a	3.5	3.5	3.5	3.2	2.9	2.5	c
8	a	2.3f	2.6f	a	3.4f	3.5f	3.5f	3.5f	3.5f	3.6f	3.5f	3.4f	3.1	2.8	2.6f	a
9	a	a	a	a	3.2	a	a	a	a	a	a	a	a	2.8f	a	c
10	a	a	a	a	3.2	a	3.5	3.5	a	3.5f	3.4f	3.3	3.1	2.9	2.5	c
11	b	a	2.8f	3.0	3.2	3.5	3.5	3.6	3.5	3.5	3.5	3.3	3.2	2.8	2.7	c
12	a	a	a	a	b	b	b	a	3.5	b	3.4	c	a	a	a	a
13	a	2.5f	2.7	3.0	3.2	3.3	a	3.4	3.4	3.4	3.3f	3.1f	a	a	c	c
14	2.2	b	b	b	3.3	3.3	3.5	3.4	3.4	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	3.2	3.2	3.2	a	3.2	b	b	2.3	a
16	a	a	2.6	a	b	b	3.5f	b	3.4	b	b	3.1f	2.8	2.6f	2.5	a
17	a	a	a	a	b	b	b	3.1	b	3.4	3.2	3.2	2.7	2.5	c	a
18	a	2.4	2.7	3.0	3.0	3.1	3.3	3.3	3.4	3.3	a	c	2.7	2.3	a	a
19	a	2.5	2.8	2.9	3.1	3.3	3.3	3.2	a	a	3.2	3.0	c	c	c	c
20	a	a	a	a	3.0	3.4	a	3.5	a	a	a	3.2	2.9	a	a	c
21	a	2.0	2.5	2.8	3.0	3.1	3.2	3.3	a	3.3	3.2	a	3.0	2.7	2.3	c
22	a	a	2.7f	a	3.1f	3.3	c	3.4	3.3	3.3	3.2	3.2	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	3.2	3.1	c	c	
24	c	c	c	c	c	c	c	c	c	b	b	3.4	3.2	3.0	2.5	2.1
25	e	a	2.4	2.7	3.1	3.3	3.3	a	a	a	a	a	a	2.8	2.4	c
26	a	2.1	2.6	2.8	a	3.3	3.5	3.6	3.6	3.6	3.5	3.4	3.2	3.0	2.6	c
27	b	a	3.2	3.2	3.2	a	3.6	a	3.6	3.5	3.3	a	a	3.0	a	c
28	c	c	c	c	c	c	c	c	c	3.5	3.5	3.4	3.5	3.1	2.7	b
29	b	b	b	b	b	3.5	3.5	3.5	3.5	a	a	3.3	3.1	2.7	b	c
30	a	a	2.8	3.2	3.4	b	b	b	a	a	3.4	3.4	3.2	3.1	c	c
31	a	a	b	a	3.2	b	b	a	a	3.5	b	b	c	c	c	c
Median	*	2.4	2.6	3.0	3.2	3.3	3.5	3.5	3.5	3.5	3.5	3.3	3.2	2.9	2.6	*
No.		11	17	14	21	17	16	17	17	19	19	20	20	21	15	

Sweep: 1.0 - 13.0 Mc/s in 1m 5s Time used: 157.5° E.M.T. MACQUARIE ISLAND foE; JANUARY 1951

HOURLY VALUES OF fEs OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

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	4.0	3.6	4.0	6.0	5.0	3.6	3.6	3.6	3.6	3.7	3.8	4.5	3.6	3.5	g	g	g	g	5.0	c	3.5	3.2	4.4	7.0
2	6.0	4.6	4.6	4.4	4.6	g	g	g	3.5	3.6	4.0	3.7	3.8	4.0	4.6	4.2	5.0	g	4.0	c	4.4	6.5	5.4	6.7
3	10.0	4.4	3.9	3.7	2.2	2.9	b	3.2	3.5	3.5	3.8	4.0	g	g	g	3.6	c	c	c	c	c	c	c	c
4	3.7	3.6	2.0	1.8	g	g	g	3.6	3.6	3.8	4.3	3.7	g	4.2	g	b	3.4	g	g	c	5.6	c	c	c
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.1	6.6	3.5	c	4.0	c	c	e
6	4.5	7.5	5.0	4.5	10.0	5.0	3.6	3.5	3.4	c	4.0	g	3.9	4.0	g	g	g	3.3	3.5	2.6	4.0	2.6	4.5	6.0
7	5.0	4.4	5.5	6.0	2.8	3.8	3.6	3.6	3.6	g	c	c	3.8	3.8	g	g	3.7	3.2	2.9	c	5.0	8.0	9.0	4.5
8	e	3.2	e	e	2.3	3.7	3.6	9.0	3.8	4.4	3.7	4.0	3.7	3.7	3.6	4.2	4.3	4.4	4.0	3.6	4.0	c	5.0	6.0
9	7.0	5.5	4.0	4.5	4.2	3.9	3.8	3.7	4.5	4.2	3.9	3.8	4.5	4.3	4.5	4.4	3.8	3.8	3.6	c	3.3	6.6	4.4	2.3
10	e	5.5	c	e	3.6	3.6	4.4	4.4	3.6	3.7	3.6	3.7	3.7	3.7	3.6	3.7	3.2	3.5	3.2	c	4.2	3.0	2.5	2.2
11	4.0	4.4	4.6	3.5	b	4.5	3.5	3.6	3.5	g	g	g	g	g	g	g	g	3.5	3.5	c	4.0	4.5	4.5	3.6
12	3.0	e	e	e	2.2	3.6	3.6	3.6	b	b	3.5	3.6	g	b	g	c	5.5	4.5	6.5	5.5	4.5	5.0	5.5	7.5
13	7.5	4.5	4.0	4.5	3.0	g	g	g	g	g	3.5	3.6	3.6	g	g	3.6	3.5	4.4	c	c	3.6	3.6	4.5	4.4
14	3.7	3.6	2.9	3.6	3.7	b	b	b	g	3.6	g	g	g	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	3.6	4.4	3.6	3.6	3.5	g	g	2.8	3.6	2.9	3.6	4.8	4.5
16	3.7	4.5	4.4	2.7	2.2	3.5	g	2.8	b	b	g	b	g	b	b	g	g	3.0	2.8	2.2	4.0	6.0	5.0	3.0
17	3.6	2.7	4.4	4.5	4.5	3.5	3.3	b	b	b	b	g	3.0	g	g	g	g	2.7	c	3.5	3.6	3.7	4.2	e
18	2.7	4.0	2.5	2.2	2.5	g	g	g	3.6	4.0	5.5	3.6	3.7	3.6	3.6	c	4.4	5.5	10.0	8.0	4.5	3.6	3.5	4.5
19	4.5	4.2	2.7	2.2	2.2	g	g	3.5	3.5	3.6	4.0	3.6	4.3	3.4	3.5	3.3	c	a	c	c	c	3.6	5.2	4.3
20	5.6	3.6	2.0	2.0	2.2	4.3	3.6	4.4	3.5	6.0	7.0	7.5	5.5	6.0	4.0	3.6	6.5	5.6	7.4	c	6.0	4.6	3.6	4.6
21	4.5	4.5	4.5	3.6	2.2	3.7	6.5	5.6	4.5	3.7	3.6	3.6	3.5	3.5	3.6	3.4	3.4	5.0	5.7	c	e	3.7	3.7	4.5
22	4.5	5.7	4.5	4.6	4.5	4.3	3.5	3.5	3.6	3.5	c	3.5	3.6	3.5	3.6	3.6	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.5	5.8	c	c	c	c	c	5.5	4.5
24	c	c	c	c	c	c	c	c	c	c	c	c	c	3.5	3.3	g	g	3.3	3.5	g	2.8	2.5	3.6	5.0
25	3.0	3.8	2.2	2.0	e	2.6	2.7	3.9	3.5	3.6	5.0	4.2	4.0	3.9	3.4	3.5	3.0	8.0	3.6	c	10.0	5.6	10.0	3.5
26	5.0	3.6	3.0	e	3.6	2.6	2.6	3.4	3.4	3.6	g	g	g	g	g	3.6	3.3	g	3.1	c	e	e	e	5.6
27	6.0	b	3.8	4.3	b	4.4	4.3	3.7	3.7	3.7	g	3.5	g	g	g	3.6	3.5	3.6	3.6	c	4.0	6.4	5.0	5.0
28	c	c	c	c	c	c	c	c	c	c	c	c	c	g	3.6	g	g	6.0	4.6	b	4.0	5.0	5.0	4.6
29	4.9	5.0	5.0	5.0	b	b	b	b	b	g	4.0	3.9	4.3	4.3	3.6	3.7	g	g	b	c	3.5	3.8	3.5	4.5
30	3.2	4.5	4.0	4.4	3.7	3.8	3.0	g	g	b	b	4.6	6.5	4.4	4.3	g	3.6	g	c	c	c	5.5	5.0	7.0
31	4.2	3.9	3.7	4.6	3.6	3.6	b	3.2	g	b	b	3.5	3.6	g	3.6	b	c	c	c	c	c	c	6.0	4.5
Median	4.4	4.4	4.0	3.6	3.0	3.6	3.5	3.6	3.5	3.6	3.8	3.6	3.6	3.6	3.5	3.6	3.4	3.5	3.6	3.6	4.0	3.8	4.6	4.5
No.	26	25	25	26	23	24	22	23	22	20	21	25	27	26	27	25	26	25	21	8	24	23	26	27

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND fEs, JANUARY 1951

HOURLY VALUES OF h'F2 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

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	250	260	300	300	260	220	260	310	280	300	340	300	330	330	330	320	310	320	310	c	290	270	290	a
2	b	b	b	380	450	250	320	350	320	360	350	450	400	360	360	350	350	350	340	300	290	250	b	b
3	b	b	b	350	250	250	240	420	350	360	360	400	350	400	360	390	c	c	c	c	c	c	c	c
4	b	310	300	260	260	320	270	300	320	300	320	310	350	340	330	300	280	260	250	c	240	c	c	c
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	310	250	250	c	330	c	c	260
6	250	270	300	260	b	250	300	350	310	c	340	330	360	350	400	330	300	300	270	240	240	260	250	300
7	310	300	260	b	230	230	210	310	280	300	c	c	350	360	300	300	310	280	260	[260]	270	270	280	260
8	240	240	220	230	220	230	220	320	300	310	300	350	310	330	340	310	290	290	290	300	300	250	b	b
9	b	b	320	280	230	260	250	310	310	310	300	340	310	310	350	310	320	270	210	c	260	[330]	290	330
10	250	260	c	250	250	220	260	400	350	325	300	350	330	350	350	350	330	300	270	c	250	230	240	270
11	300	300	310	b	b	b	210	g	g	g	500	g	g	g	500	550	400	350	350	c	350	b	b	350
12	390	300	360	320	260	250	210	g	b	b	240	g	g	g	g	c	440	450	f	b	b	b	b	b
13	b	b	b	400	260	250	350	380	g	350	370	350	360	360	340	340	350	310	c	c	290	280	300	300
14	300	300	300	260	250	b	b	b	550	g	g	g	410	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	410	410	450	380	370	340	350	320	260	270	270	b	b
16	350	b	b	380	270	260	250	450	b	b	g	b	520	b	b	450	500	370	380	280	310	b	b	b
17	b	b	b	b	b	270	400	b	b	b	b	450	450	420	390	400	310	320	c	250	260	280	280	290
18	290	b	300	270	260	210	320	320	320	450	330	350	320	340	330	5	270	270	210	b	230	250	250	300
19	b	b	f	270	230	220	380	320	340	300	320	320	360	320	310	300	c	c	c	c	c	b	b	b
20	b	360	240	260	270	250	240	230	400	400	400	420	b	410	b	450	350	360	260	c	250	280	280	300
21	b	b	b	300	260	240	300	360	370	320	350	350	330	310	310	310	300	300	b	c	240	230	300	350
22	f	b	b	b	b	b	300	400	530	490	c	g	g	480	360	400	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	360	c	c	c	c	c	b	b
24	c	c	c	c	c	c	c	c	c	c	c	c	c	350	350	330	320	270	280	220	250	270	300	b
25	270	270	290	290	250	230	240	250	360	330	330	350	320	290	300	330	290	250	260	c	350	220	b	270
26	b	360	300	250	200	220	200	200	250	270	260	260	270	270	270	250	260	240	200	c	220	240	240	250
27	250	b	b	b	b	b	b	g	g	g	500	660	400	460	480	300	350	240	370	c	310	b	b	b
28	c	c	c	c	c	c	c	c	c	c	c	c	c	350	310	300	310	300	220	b	340	b	b	b
29	b	b	b	300	b	b	b	450	b	330	360	350	350	320	330	320	280	300	290	c	380	b	b	b
30	300	b	300	310	290	300	240	280	330	b	340	300	320	300	320	310	300	300	c	c	c	b	290	300
31	260	280	270	b	b	320	b	360	440	450	350	380	410	460	410	b	c	c	c	c	c	c	b	b
Median	280	300	300	285	260	250	255	350	345	330	340	350	355	350	345	330	310	300	270	(260)	270	265	280	300
No.	14	13	15	20	19	21	22	24	22	21	23	25	26	27	26	26	26	25	20	8	23	16	13	14

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157. 5° E.M.T. MACQUARIE ISLAND h'F2, JANUARY 1951

HOURLY VALUES OF hpF2 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

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	310	280	360	300	280	250	260	310	280	300	340	300	330	330	330	320	310	320	310	c	310f	290	320	a
2	b	b	b	380	450	250	320	350	320	366	350	450	400	360	360	350	350	350	340	300	300	300	b	b
3	b	b	b	350	270	250	240	420	350	360	360	400	350	400	370	390	c	c	c	c	c	c	c	c
4	b	320	320	270	270	320	280	300	320	300	320	310	350	350	330	300	290	270	270	c	250	c	c	c
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	310	260	290	c	340	c	c	280
6	300	300	350	290	b	250	300	350	310	c	340	330	360	350	400	330	300	300	280	260	280	300	290	310
7	330	300	270	b	250	240	270	310	280	300	c	c	350	360	300	300	310	290	280	[290]	300	300	310	290
8	250	260	240	260	240	270	260	320	300	310	300	350	310	330	340	310	290	290	300	300	310	280	b	b
9	b	b	320	290	240	270	250	310	310	310	300	340	310	310	350	310	320	290	220	c	270	[330]	290	320
10	270	280	c	270	260	250	270	400	350	325	300	350	330	350	350	350	330	300	280	c	260	260	260	300
11	330	300	310	b	b	b	210	g	g	g	500	g	g	g	500	550	400	350	350	c	350	b	b	350
12	390	310	400	330	300	250	210	g	b	b	240	g	g	g	g	c	440	450	f	b	b	b	b	b
13	b	b	b	400	260	250	350	380	g	350	370	350	360	360	340	340	350	310	c	c	310	300	300	300
14	300	310	300	260	260	b	b	b	550	g	g	g	410	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	410	410	450	380	370	340	350	330	300	300	300	b	b
16	350	b	b	380	270	260	250	450	b	b	g	b	520	b	b	450	500	370	400	300	310	b	b	b
17	b	b	b	b	b	270	400	b	b	b	b)	450	450	320	390	400	320	320	c	260	290	300	300	320
18	290	b	300	290	260	250	320	320	320	450	330	350	320	340	330	c	280	270	230	b	270	290	290	300
19	b	b	f	290	240	250	380	320	340	300	320	320	360	320	310	300	c	c	c	c	c	b	b	b
20	b	360	250	270	280	260	240	250	400	400	400	420	b	410	b	450	350	360	260	c	270	280	280	330
21	b	b	b	320	280	250	300	360	370	320	350	350	330	310	310	310	300	300	b	c	250	250	310	350
22	f	b	b	b	b	b	310	400	530	490	c	g	g	480	360	400	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	360	c	c	c	c	c	b	b
24	c	c	c	c	c	c	c	c	c	c	c	c	c	350	350	330	320	280	290	250	270	300	300	b
25	280	280	300	300	260	290	250	270	360	330	330	350	320	290	300	330	300	260	270	c	350	300	b	300
26	b	360	320	300	230	230	240	220	250	270	260	260	270	270	270	250	260	250	230	c	230	250	240	260
27	250	b	b	b	b	b	b	g	g	g	500	660	400	460	480	300	360	270	370	c	310	b	b	b
28	c	c	c	c	c	c	c	c	c	c	c	c	c	350	310	300	310	310	240	b	340	b	b	b
29	b	b	b	300	b	b	b	450	b	330	360	350	350	320	330	320	290	310	310	c	390	b	b	b
30	310	b	300	310	300	300	300	290	330	b	340	300	320	300	320	310	310	300	c	c	c	b	310	320
31	260	300	290	b	b	320	b	360	440	450	350	380	410	460	410	b	c	c	c	c	c	c	b	b
Median	300	300	300	300	260	250	270	335	345	330	340	350	355	350	345	330	315	300	285	(295)	300	300	300	305
No.	14	13	15	20	19	21	22	24	22	21	23	25	26	27	26	26	26	25	20	8	23	16	13	14

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157. 5° E.M.T.

HOURLY VALUES OF h'F1 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	q	210	200	200	200	200	180	180	210	200	200	200	210	210	c
2	q	230	210	220	200	200	200	200	200	200	240	210	220	240	c
3	q	q	220	200	200	210	200	200	200	190	250	c	c	c	c
4	240	200	200	190	200	200	190	200	200	200	200	200	200	210	c
5	c	c	c	c	c	c	c	c	c	c	c	250	q	q	c
6	q	210	190	170	c	190	190	200	200	200	190	190	190	240	q
7	q	q	210	200	180	c	c	200	200	200	200	200	220	210	c
8	q	q	220	200	200	190	200	200	200	190	190	200	200	200	q
9	q	220	210	200	210	200	200	200	180	200	200	210	q	q	c
10	q	q	210	210	200	200	200	200	190	190	210	220	220	c	c
11	b	q	200	190	230	210	210	210	210	200	210	220	220	250	c
12	q	q	260	b	b	210	200	200	200	200	c	a	(310)	a	b
13	q	240	230	210	210	200	200	200	200	200	200	230	a	c	c
14	b	b	b	200	220	250	200	210	c	c	c	c	c	c	c
15	c	c	c	c	c	c	200	200	200	200	210	230	220	200	q
16	q	q	220	b	b	230	b	220	210	b	220	210	210	220	c
17	q	240	b	b	b	b	200	230	210	210	200	230	210	c	q
18	q	220	200	200	200	200	200	200	200	210	c	200	200	c	b
19	q	210	200	200	200	210	200	200	210	200	200	c	c	c	c
20	q	q	q	210	210	200	220	210	200	230	210	210	250	q	c
21	q	a	240	210	210	210	200	200	200	200	210	200	a	b	c
22	b	250	250	230	200	c	210	210	210	210	200	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	210	250	c	c	c
24	c	c	c	c	c	c	c	c	220	200	220	200	230	250	q
25	q	q	q	230	200	200	210	200	200	200	200	200	a	240	c
26	q	q	q	200	190	180	180	180	180	170	170	190	190	q	c
27	b	210	220	200	210	200	200	200	200	200	200	200	q	a	c
28	c	c	c	c	c	c	c	c	210	210	210	200	200	q	b
29	b	b	230	b	220	200	200	220	220	200	210	200	220	210	c
30	q	q	210	200	b	210	b	200	200	200	200	200	210	c	c
31	q	b	190	250	240	220	200	200	220	b	b	c	c	c	c
Median	*	220	210	200	200	200	200	200	200	200	200	200	210	215	
No.		11	21	22	21	23	24	27	28	26	26	25	19	12	

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND h'F1, JANUARY 1951

HOURLY VALUES OF h'E OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	a	100	100	100	100	100	100	a	100	100	100	100	100	110	110	c
2	a	100	100	110	100	100	100	a	100	100	100	100	100	100	110	c
3	a	100	b	b	100	100	100	100	100	100	100	a	c	c	c	c
4	100	100	110	110	110	110	110	100	110	110	110	b	110	110	110	c
5	c	c	c	c	c	c	c	c	c	c	c	c	110	100	a	c
6	a	a	100	100	100	c	a	100	100	100	100	100	100	100	110	a
7	a	100	100	100	100	100	c	c	a	100	100	100	100	100	110	c
8	a	100	100	a	100	100	100	100	100	100	100	100	100	110	100	a
9	a	a	a	a	110	a	a	a	a	a	a	a	a	110	a	c
10	a	a	a	a	100	a	100	100	a	100	100	100	100	100	110	c
11	b	a	110	110	100	100	100	100	100	100	100	100	100	110	110	c
12	a	a	a	a	b	b	b	a	100	b	110	a	a	a	a	a
13	a	100	110	110	100	100	a	100	100	110	110	110	a	a	c	c
14	100	b	b	b	110	110	110	110	100	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	100	100	100	a	110	b	b	100	a
16	a	a	100	a	b	b	100	b	110	b	b	110	110	100	110	a
17	a	a	a	b	b	b	b	100	b	110	100	100	100	110	c	a
18	a	110	100	100	100	100	100	100	100	100	a	c	110	120	a	a
19	a	100	100	100	100	100	110	100	a	a	110	110	c	c	c	c
20	a	a	a	a	100	100	a	100	a	a	a	100	100	a	a	c
21	a	130	110	100	100	100	110	100	a	100	100	a	100	110	110	c
22	a	a	100	a	100	100	c	100	100	100	100	110	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	110	110	c	c	c
24	c	c	c	c	c	c	c	c	c	b	b	110	110	110	110	110
25	e	a	100	100	100	100	100	a	a	a	a	a	a	110	100	c
26	a	110	110	100	a	100	100	110	100	110	100	100	110	100	100	c
27	b	a	100	100	100	a	100	a	100	100	100	a	a	100	a	c
28	c	c	c	c	c	c	c	c	c	100	100	100	100	110	100	b
29	b	b	b	b	b	100	100	110	100	a	a	100	100	100	b	c
30	a	a	100	100	100	b	b	b	a	a	100	110	110	110	c	c
31	a	a	b	a	100	b	b	a	a	100	b	b	c	c	c	c
Median	*	100	100	100	100	100	100	100	100	100	100	100	100	110	110	*
No.		11	17	14	21	17	16	17	17	19	19	20	20	21	15	

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND h'E JANUARY 1951

HOURLY VALUES OF h'Es OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

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	110	120	110	100	100	110	110	110	100	100	100	100	100	100	g	g	g	g	110	c	120	110	110	100
2	100	100	100	100	100	g	g	g	100	100	100	100	100	110	100	120	120	g	140	c	120	110	100	100
3	100	100	100	100	100	100	b	110	110	100	100	100	g	g	g	100	c	c	c	c	c	c	c	c
4	100	100	100	110	g	g	g	120	120	110	110	110	g	120	g	b	120	g	g	c	110	c	c	c
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	120	120	120	c	110	c	c	c
6	130	100	100	100	100	100	100	120	100	c	100	g	120	120	g	g	g	110	110	110	110	150	110	110
7	110	110	100	100	100	100	100	110	110	g	c	c	100	100	g	g	100	110	120	c	150	110	110	110
8	e	100	e	e	130	100	100	100	100	100	100	100	100	100	100	120	110	100	100	120	120	c	100	100
9	100	100	100	100	100	100	100	100	100	110	110	100	100	100	100	100	110	110	110	c	130	110	110	110
10	e	120	c	e	110	110	110	110	100	100	100	100	100	100	100	100	100	120	110	c	110	100	110	160
11	130	140	140	100	b	100	120	120	100	g	g	g	g	g	g	g	g	120	110	c	100	110	100	100
12	120	e	e	e	100	100	110	100	b	b	100	100	g	b	g	c	100	100	110	100	100	100	100	100
13	100	100	100	100	100	g	g	g	g	g	100	100	100	g	g	110	110	120	c	c	110	110	110	100
14	100	100	100	100	100	b	b	b	g	100	g	g	g	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	100	100	100	100	100	g	g	110	110	110	110	100	100
16	100	100	100	110	100	100	g	100	b	b	g	b	g	b	b	g	g	120	120	130	100	100	100	100
17	100	100	100	100	100	100	100	b	b	b	b	g	100	g	g	g	g	120	c	110	110	100	110	e
18	100	100	130	110	110	g	g	g	110	110	100	100	100	100	100	c	120	110	100	100	100	120	120	110
19	100	100	100	100	100	g	g	110	100	110	100	110	100	110	100	100	c	c	c	c	c	110	110	100
20	100	110	110	110	110	110	110	110	110	100	110	100	110	100	100	110	110	110	120	c	110	110	100	100
21	100	100	100	100	110	130	120	110	110	110	110	110	100	100	100	110	110	120	110	c	e	120	110	110
22	100	100	100	100	100	100	100	100	100	100	c	110	100	100	110	150	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	110	c	c	c	c	c	110	110
24	c	c	c	c	c	c	c	c	c	c	c	c	c	100	120	g	g	110	110	g	110	130	100	100
25	100	100	100	100	e	110	100	110	110	110	110	110	110	110	110	110	110	110	110	c	110	110	110	110
26	110	110	110	e	100	110	110	100	110	110	g	g	g	g	g	100	110	g	100	c	e	e	e	110
27	110	b	100	100	b	110	100	100	110	110	g	100	g	g	g	110	110	100	100	c	110	100	100	100
28	c	c	c	c	c	c	c	c	c	c	c	c	c	g	100	g	g	100	100	b	100	100	100	100
29	100	100	100	100	b	b	b	b	b	g	100	110	110	100	110	100	g	g	b	c	100	100	100	100
30	100	100	100	100	100	100	100	g	g	b	b	100	100	100	100	g	100	g	c	c	c	100	100	100
31	100	100	100	100	100	100	b	100	g	b	b	100	100	g	100	b	c	c	c	c	c	c	100	100
Median	100	100	100	100	100	100	100	110	105	105	100	100	100	100	100	110	110	110	110	110	110	110	100	100
No.	24	24	23	22	21	19	16	19	18	16	16	20	19	18	16	16	17	18	20	7	22	22	25	25

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 15h. 5°E.M.T. MACQUARIE ISLAND h'Es, JANUARY 195[illegible]

HOURLY VALUES OF (M 3000) F2 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

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	3.0f	2.9f	2.7f	3.0f	3.1	3.2	3.4	3.1	3.2	3.3	3.0	3.1	3.1	3.0	3.0	3.1	3.1	3.2	3.1	c	3.0f	3.1f	3.0	a
2	b	b	b	2.8	2.7f	3.3f	3.2	3.1	3.2	3.2f	3.2	2.8	2.9	2.9	2.8	3.0	3.1	3.0f	3.1	[3.0]	3.0	3.1	b	b
3	b	b	b	2.9	3.0f	3.0	3.1	2.9	3.0	2.9	3.0	3.0	3.0	2.9	2.9	2.8	c	c	c	c	c	c	c	c
4	b	3.0	3.1	3.2	3.3	3.2	3.4	3.3	3.3	3.3	3.1	3.1	3.0	2.9	3.1	3.1	3.2	3.5	3.3	c	3.3	c	c	c
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.4	3.3f	3.3f	c	3.0f	c	c	2.9
6	3.0f	2.9f	3.0f	3.0f	b	3.3	3.1	3.3f	3.3f	c	3.1	3.0	3.0	3.2	3.0f	3.0f	3.1	3.0	3.2	3.1	3.1	3.2	2.9f	3.0f
7	2.9f	2.6f	3.4f	b	3.4	3.6	2.9	3.3	3.1	3.0	c	c	3.0	3.1	3.0	3.1	3.0	3.1	3.2	[3.2f]	3.0	(3.0f)	(3.0f)	(3.1f)
8	(3.4f)	(3.0f)	(3.1f)	(3.2f)	(3.1f)	(3.1f)	(3.1f)	3.2	3.2	3.2	3.4	3.0	3.3	3.3	3.0	3.2	3.1	3.3	3.2	(3.0f)	(3.0f)	[3.3f]	b	b
9	b	b	3.1f	3.2f	3.3f	3.4	3.4	3.2	(3.3)	2.9f	3.4	3.0	3.2	3.1	2.7	3.0	3.0	3.1	3.6	c	3.5	[3.1f]	3.2f	3.0f
10	3.0f	3.0f	c	2.9f	3.0	3.1	3.2	2.9	3.0	3.0	3.3	3.0	3.1	3.1	3.0	3.0	3.1	3.1	3.3	c	3.2f	(3.5f)	(3.1f)	2.9f
11	2.7f	(3.0f)	(3.1f)	b	b	b	3.8f	g	g	g	2.6	g	g	g	2.7f	2.5	2.9	3.0f	3.0	c	2.8f	b	b	(2.9f)
12	(2.5f)	(2.8f)	(2.7)	(2.9f)	(2.8f)	(3.1f)	(3.4f)	g	b	b	3.7	g	g	g	g	c	2.7	2.9f	f	b	b	b	b	b
13	b	b	b	2.9	3.1f	3.3f	3.2	3.0	g	3.2	3.0	3.1	3.1f	3.0	3.0	3.0	2.8	3.2	c	c	3.1	3.0	3.0	2.9
14	2.6f	2.9f	3.0f	3.2	3.2	b	b	b	2.4	g	g	g	2.9	c	c	c	c	c	c	c	c	c	c	c
15	c	c	c	c	c	c	c	c	c	c	c	2.9	2.8	2.8f	3.0f	3.1f	3.0f	2.8f	2.8f	(2.9f)	2.9f	3.0f	b	b
16	3.0f	b	b	3.0	3.0	3.0	3.2	2.8	b	b	g	b	2.5	b	b	2.9	2.6f	2.8f	[3.0]	[3.1]	3.0	b	b	b
17	b	b	b	b	b	3.3f	2.9	b	b	b	b	2.8	2.8	2.9	2.9	2.8	3.1	3.0f	c	3.2	3.2f	2.9f	2.9f	3.0f
18	3.2f	b	3.0f	3.0f	3.3	3.1	(3.2f)	3.3	3.3	2.8	3.2	3.0	3.3	3.0	3.2	c	3.3	3.2	[3.4]	b	3.2	3.1f	3.0f	3.0f
19	b	b	f	3.2	3.5	3.5	2.9	3.3	3.0	3.3	3.2	3.1	3.0	3.1	3.1	3.1	c	c	c	c	c	b	b	b
20	b	3.4f	3.1f	3.1f	2.9	3.0	3.2	3.2	2.8f	2.8f	2.7f	2.7f	b	2.8	b	2.7	3.1	3.0f	3.0f	c	3.0f	3.0f	3.0f	2.9f
21	b	b	b	2.6f	2.9f	3.1f	3.2	3.1	3.0	3.1	3.1	3.2	3.3	3.1	3.3	3.1	3.0	3.2	b	c	3.0f	3.2f	2.9f	2.8f
22	f	b	b	b	b	b	3.0f	2.9f	2.6f	2.8	c	g	g	2.5	3.2	2.7	c	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.2	3.0	c	c	c	c	c	b	b
24	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.1	3.0	3.0	3.3	3.5	3.3	3.3f	2.9f	2.8f	b
25	3.2f	2.9f	2.9f	3.0f	3.2	3.1	3.2	3.0	2.7f	2.9	3.1	2.9	3.1	3.2	3.0	3.0	3.0	3.1	3.2	c	3.0	2.9	b	3.0f
26	b	3.0f	3.0f	3.1f	3.7f	3.5	3.5	3.5	3.4	3.4	3.3	3.4	3.4	3.2	3.4	3.3	3.3	3.4	3.4	c	3.1f	3.3f	3.2f	3.3f
27	3.2f	b	b	b	b	b	b	g	g	g	2.6	1.9	2.8f	2.5	2.8f	3.0f	2.9f	3.2f	2.8	c	2.9	b	b	b
28	c	c	c	c	c	c	c	c	c	c	c	c	c	2.9	3.0	3.0f	3.0f	3.0f	3.0f	b	2.8f	b	b	b
29	b	b	b	3.0f	b	b	b	f	b	3.2f	3.2	3.2	3.1	3.0	3.0	3.0	3.1	3.1	3.2	c	2.8	b	b	b
30	3.1	b	3.3	3.2	3.1	3.0	3.0	3.3	3.0	b	3.0	3.0	3.1	2.9	3.0	2.9	3.1	3.1	c	c	c	b	3.0	2.9
31	3.1f	3.0f	3.1f	b	b	2.8f	b	3.0f	2.7f	2.7f	3.1	3.0f	2.8f	2.5	2.6	b	c	c	c	c	c	c	b	b
Median	3.0f	3.0f	3.1f	3.0f	3.1f	3.1f	3.2	3.1	3.0	3.0	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	(3.1f)	3.0f	3.1f	3.0f	3.0f
No.	14	13	15	20	19	21	22	23	22	21	23	25	26	27	26	26	25	25	20	8	23	16	13	14

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND (M 3000) F2. JANUARY 1951

HOURLY VALUES OF (M 3000)F1 OBSERVED DURING JANUARY 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	q	1	3.6	3.7	3.8	3.7	3.7	3.6	3.7	3.8	3.8	3.6	3.5	3.7	c
2	q	3.3	3.6	3.7	3.4	3.8	3.6	3.7	3.8	3.9	3.7	3.6	3.6	3.8	c
3	q	q	3.6	3.6	3.6	3.7	3.7	3.8	3.8	3.9	3.6	c	c	c	c
4	1	3.7	3.6	4.0	4.1	3.8	4.0	3.8	3.7	3.8	4.0	3.8	3.9	1	c
5	c	c	c	c	c	c	c	c	c	c	c	3.6	q	q	c
6	q	1	3.6	3.7	c	3.9	3.8	3.8	3.9	3.7f	3.6f	3.6f	3.6	1	q
7	q	q	3.5	3.5	3.6	c	c	3.6	3.8	3.5	3.5	3.7	3.6	3.9	c
8	q	q	3.6	3.5	3.8	3.5	3.9	4.1	3.9	3.6	3.5	3.6	3.8	1	q
9	q	1	3.6	3.6	3.7	3.6	3.5	3.6	4.0	4.0	3.6	3.5	q	q	c
10	q	q	3.6	3.6	3.6	3.8	3.7	3.7	3.6	3.8	3.5	3.5	3.7	1	c
11	b	q	3.6	3.7	3.7	3.6	4.0	3.9	3.8	3.8	3.7	3.4	3.2f	3.6	c
12	q	q	(3.6f)	b	b	3.8	3.7	3.8	4.0	3.7	c	a	1	a	b
13	q	3.5	3.6	3.8	3.8	3.8	3.8	3.6f	3.9	3.6	3.8	3.5	a	c	c
14	b	b	b	3.6f	3.8	3.7	3.7	3.8	c	c	c	c	c	c	c
15	c	c	c	c	c	c	4.0	3.9	3.9	3.8	3.8	3.6	3.6	3.3	q
16	q	q	3.6	b	b	3.7	b	3.8	3.6	b	3.7	3.7	3.6	3.5	c
17	q	3.9	b	b	b	b	3.8	3.8	3.7	3.8	3.7	3.5	3.5	c	q
18	q	(3.6)	3.8	3.8	3.8	4.0	3.8	3.7	3.9	3.7	c	1	1	c	b
19	q	3.8	3.9	3.7	3.6	3.8	3.9	3.8	3.7	3.6	3.6	c	c	c	c
20	q	q	q	3.6	3.7f	3.8	3.9f	3.9	3.7	3.7	3.5	3.3	3.4	q	c
21	q	a	3.8	3.7	3.7	3.6	3.6	3.7	3.8	3.8	3.5	3.7	1	b	c
22	b	3.6	3.9	4.0f	3.8f	c	3.7f	3.7f	3.7f	3.8f	4.0	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	3.8	3.5	c	c	c
24	c	c	c	c	c	c	c	c	3.9	3.8	3.8	3.5	3.5	1	q
25	q	q	q	3.6	3.6	3.5	3.5	3.5	3.5	4.0	3.5	3.5	a	1	c
26	q	q	q	3.8	3.8	3.7	3.9	4.0	3.9	3.8	3.8	4.0	4.0	q	c
27	b	3.7	3.6	3.6	4.0	4.1	4.0f	4.0f	4.1f	3.9f	3.7f	3.6	q	a	c
28	c	c	c	c	c	c	c	c	3.6	3.6	3.6	3.5	3.6	q	b
29	b	b	3.7f	b	3.9f	3.9f	3.9	3.7	3.6	3.6	3.6	3.8	3.5	1	c
30	q	q	3.7	3.6	b	3.7	b	3.4	3.9	3.6	3.9	3.8	3.7	c	c
31	q	b	3.8	3.7	3.7	3.9	3.9	3.9	3.8	b	b	c	c	c	c
Median		3.6	3.6	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.7	3.6	3.6	3.6	
No.		8	21	22	21	23	24	27	28	26	26	24	17	6	

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157. 5° E.M.T.

HOURLY VALUES OF f°F2 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	b	c	c	c	c	c	c	c	g	b	b	5.0
2	c	c	c	c	c	c	c	c	c	c	c	c
3	3.6f	2.8f	b	b	3.6	4.7	5.6	6.0	7.0	7.0	7.0	7.0
4	5.0f	4.5f	3.6f	3.3f	3.2f	4.0f	5.0f	5.5	6.5	6.5	6.8	7.0
5	b	b	b	3.4f	4.6f	5.4f	5.6	5.5	6.3	6.6	6.6	6.6
6	b	b	b	b	4.1f	4.6f	b	4.3f	5.0f	5.6f	5.6f	5.2f
7	b	c	c	c	c	c	c	c	c	c	c	c
8	3.0f	3.3f	3.5f	3.5f	3.1f	3.2f	3.8f	4.6	5.1	5.3	6.0	5.9
9	3.7f	3.4f	b	b	b	b	b	b	b	4.8f	4.8	(4.6f)
10	b	b	b	b	b	b	b	b	b	b	b	b
11	b	b	3.1f	3.0f	(2.6f)	3.6	b	4.7	4.8	b	b	5.8
12	3.3f	b	b	b	b	b	b	3.8	g	4.5	g	b
13	b	b	b	b	(3.0f)	b	b	3.8	4.7	4.9	5.5	5.6
14	3.5f	b	3.5f	b	b	b	b	b	5.1	5.6	6.2	6.3
15	3.6f	2.9f	b	3.1f	2.9f	b	4.8	5.0	6.0	6.0	6.4	6.2f
16	b	3.5f	c	c	c	c	c	c	c	c	c	c
17	3.5f	3.1f	2.7f	2.6f	2.8f	3.2f	4.3f	5.5f	6.0f	6.9	6.9	6.5
18	3.5f	3.6f	4.0f	3.8f	4.0f	3.1f	4.0	5.0	5.4	6.0	6.2	6.5
19	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	c	c	c	c	c	c
22	4.4f	3.2f	2.8f	2.4f	b	5.5f	5.8f	6.1	6.0f	6.1f	6.3	5.8
23	c	c	c	c	c	c	c	c	c	c	c	b
24	b	b	b	b	b	b	b	b	b	b	b	b
25	b	b	b	b	b	b	3.8	4.5	5.2	5.2	5.6	6.0
26	3.6f	b	3.6	b	b	3.4f	4.0	4.8	4.8	b	b	6.0
27	b	b	b	c	c	c	c	c	c	c	c	c
28	b	b	b	b	b	b	3.5f	4.3f	4.8	5.1	5.0	6.0
Median	3.6f	(3.3f)	(3.5f)	(3.2f)	3.2f	3.8	4.3f	4.8	5.1	5.6	6.2	6.0
No.	11	9	8	8	10	10	11	15	17	15	15	17

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND f°F2, FEBRUARY 1951

HOURLY VALUES OF f°F2 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	4.9	b	b	5.7f	b	b	(4.4)	c	b	b	b	b
2	c	5.0	5.1f	5.5f	a	5.7	5.7	c	5.5f	5.0	5.0	4.1f
3	7.0	7.0	7.0	7.0	7.0	6.5	6.8	c	6.7f	6.7f	6.4f	4.9f
4	7.0	7.0	7.0	7.0	7.0	7.0	7.0	c	b	b	b	b
5	7.0	7.0	7.0	7.0	7.0	7.1	7.0	c	5.0f	5.0f	b	b
6	b	5.7f	7.0f	b	5.3f	5.0	b	c	b	b	b	b
7	c	c	c	c	c	c	c	c	c	c	c	[3.1f]
8	6.1	[6.0]	6.0	6.5	c	[6.6]	c	5.3f	5.0f	5.0f	b	b
9	(4.8f)	(5.1f)	5.8	6.6f	7.1f	6.5f	6.4	c	4.4	4.5	b	b
10	4.8f	5.1f	5.6f	6.0f	5.8f	b	5.1f	c	4.8f	b	b	3.8f
11	6.0	b	b	7.5f	c	c	c	c	c	c	c	3.7f
12	b	6.6	7.1	8.0	7.0f	6.0f	5.2	c	3.6f	b	b	b
13	5.6	6.0	6.5	7.0	7.0	5.8f	5.7f	c	4.4	b	b	b
14	6.3	6.5	6.6	6.6	c	c	6.2f	c	6.0	4.2	4.5	3.6f
15	6.5	6.6	6.2	6.5	6.8	7.0	6.8	c	6.0	4.5	4.0	3.5f
16	c	c	6.2	6.5	6.1	6.1	6.1	b	c	5.5f	4.5f	4.0f
17	6.7	6.8	6.8	6.6	6.5	6.5	6.5	c	6.5	5.8	4.5f	4.5f
18	6.6	6.6	6.7	6.7	6.7	7.0	7.0	6.8	c	b	b	b
19	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c
21	6.0	6.0	6.3	6.0	5.9	6.7	7.0f	c	5.5f	4.4f	3.6f	4.5f
22	b	b	b	b	b	b	b	b	b	b	b	b
23	5.5	6.0	6.3f	b	6.0	b	b	b	4.5f	b	b	b
24	b	5.3	6.0f	5.3	5.2	5.9	b	c	b	b	b	b
25	5.6	5.9	6.0	6.6	6.3	6.8	6.4	c	4.9f	b	b	b
26	6.2	6.5	6.6	6.6	6.1	6.7	6.7	c	4.6f	4.5f	b	3.5f
27	c	c	8.0	7.0	7.3f	b	b	c	b	b	b	b
28	5.5	6.0	5.7	6.0	3.6f	f	b	c	b	b	b	b
Median	6.0	6.0	6.4	6.6	6.3	6.5	6.4	*	5.0f	5.0f	(4.5f)	3.8f
No.	18	20	22	22	19	17	17		15	11	7	11

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF f°F1 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17	18
1	:	c	4.0	b	b	4.5	4.4	b	b	b	b	b	b
2		c	c	c	c	c	c	4.3	4.3	4.2	a	b	b
3		q	a	a	a	a	4.7	4.2	4.7	4.7	a	4.5	q
4		q	4.5	4.5	4.8	5.0	4.7	4.8	4.8	5.0	4.5	4.3	4.0
5	4.2	4.5	4.5	4.6	4.5	4.8	4.7	4.8	4.8	4.5	4.4	4.0	q
6		q	4.3f	4.5f	4.4f	4.4f	b	4.4f	b	b	a	a	b
7		c	c	c	c	c	c	c	c	c	c	c	c
8		4.0	4.2	4.4	4.4	4.4	4.6	[4.5]	4.5	4.4	c	c	c
9		b	b	b	4.3	4.3	4.3	4.4	4.3	4.3	4.4	4.2	q
10		b	b	b	b	b	4.3	4.4	4.3f	4.3	4.0	b	
11		4.0	4.1	b	b	b	4.5	b	b	4.3	c	c	c
12		q	4.0	4.2	4.3	b	b	4.3	4.4	4.2	3.9	4.2	1
13		q	4.1	4.3	4.3	4.3	4.3	4.5	4.5	4.4	4.1	4.1	q
14		b	4.0	4.3	4.4	4.4	4.5	4.4	4.4	4.2	c	c	q
15		q	4.5	4.5	4.4	4.6	4.5	4.5	4.5	4.3	4.1	q	q
16		c	c	c	c	c	c	c	4.3	4.5	4.1	4.0	1
17		q	4.2	4.5	4.6	4.5	4.5	4.5	4.4	4.5	4.3	4.2	q
18		1	4.1	4.2	4.5	4.5	4.5	4.5	4.5	4.4	4.1	q	q
19		c	c	c	c	c	c	c	c	c	c	c	c
20		c	c	c	c	c	c	c	c	c	c	c	c
21		c	c	c	c	c	4.4	4.5	4.5	4.3	4.3	4.0	q
22		3.8	4.3	4.2f	4.4	a	b	b	b	b	b	b	b
23		c	c	c	c	b	b	1	4.3	b	4.4	b	b
24		b	b	b	b	b	4.4	4.5	4.5	4.3	4.1	3.8	b
25		q	4.3	4.5	4.5	4.6	4.5	4.5	4.4	4.3	4.2	1	q
26		3.8	4.3	b	b	4.5	4.6	4.5	4.4	4.3	4.3	q	q
27		c	c	c	c	c	c	c	b	b	b	b	b
28		3.7	4.0	4.3	4.4	4.3	4.3	4.0	4.2	b	b	b	b
Median	*	3.9	4.2	4.4	4.4	4.5	4.5	4.5	4.4	4.3	4.2	4.2	*
No.		6	16	13	14	14	18	19	20	19	15	10	

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND f°F1, FEBRUARY 1951

HOURLY VALUES OF foE OBSERVED DURING FEBRUARY 1951 AY MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	3.2	b	b	3.5	b	b	b	b	b	a	a	c
2	c	c	c	c	c	c	c	a	a	3.2	a	2.7	2.3	c
3	a	a	a	a	a	a	a	a	a	a	a	2.8	2.4	c
4	2.3	b	3.0	3.2	3.5	3.5	3.6	3.6	3.6	3.5	3.3	3.0	2.6	c
5	2.7	3.0	3.2	3.4	3.5	3.5	3.4	3.4	3.5	3.3	3.4	2.8	2.2	c
6	b	b	a	b	3.2	3.4	b	b	b	a	a	a	a	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c
8	b	b	3.0	3.1	3.2	3.4	3.5	[3.5]	3.4	3.2	c	c	c	2.0
9	b	b	b	b	3.2	3.3	3.3	3.3	3.3	3.3	3.0	2.8	2.4	c
10	b	b	b	b	b	b	b	3.4	b	b	a	a	a	c
11	b	b	b	b	b	b	3.5	b	b	3.3	c	c	c	c
12	b	b	b	3.2	b	b	b	b	b	b	b	2.7	2.4	c
13	b	b	2.9	2.9	3.0	b	b	a	b	b	3.0	2.8	2.5	c
14	b	b	b	3.0	b	b	b	3.3	b	b	c	c	2.4	c
15	b	2.5	2.9	b	a	3.2	a	a	b	a	2.9	2.5	2.0	c
16	c	c	c	c	c	c	c	c	a	3.2	b	b	b	a
17	2.0	2.7	3.0	3.1	3.2	a	a	a	a	a	a	a	2.2	c
18	1.8	2.4	a	a	3.2	3.3	3.5	3.5	3.3	3.2	b	b	2.5	a
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	a	3.3	3.2	3.0	2.7	2.5	2.2	c
22	b	2.6	3.4	3.3	3.3	a	a	a	a	a	a	b	b	b
23	c	c	c	c	c	b	b	b	b	b	2.8	a	a	b
24	b	b	b	b	b	b	b	b	3.3	a	3.0	2.6	a	c
25	b	b	b	b	a	b	b	b	b	3.0	b	2.5	a	c
26	b	a	2.8	b	b	3.2	b	b	3.4	3.0	2.6	b	a	c
27	c	c	c	c	c	c	c	c	b	b	b	b	b	c
28	2.2	2.4	2.6	a	a	3.2	3.3	3.2	3.1	b	b	b	b	c
Median	2.2	2.6	3.0	3.2	3.2	3.4	3.5	3.4	3.3	3.2	3.0	2.7	2.4	*
No.	5	6	10	8	9	10	7	9	9	11	9	11	12	

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND foE, FEBRUARY 1951

HOURLY VALUES OF fEs OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

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	3.7	c	c	c	c	c	c	c	g	b	b	g	b	b	b	b	b	6.0	4.4	c	4.3	4.1	5.0	5.0
2	c	c	c	c	c	c	c	c	c	c	c	c	c	4.2	3.5	g	11.0	8.0	8.0	c	3.0	3.2	3.5	3.6
3	3.7	5.0	9.0	6.5	3.6	3.6	3.5	5.9	7.0	4.6	5.0	6.0	4.3	4.3	4.5	6.5	6.3	3.8	2.9	c	2.1	e	e	e
4	e	e	2.7	2.2	e	2.0	g	3.3	g	g	g	g	g	g	g	g	g	g	g	c	b	b	3.5	5.0
5	4.5	5.0	5.0	4.6	3.2	3.0	2.9	3.1	g	3.6	g	3.6	g	3.5	g	g	g	g	g	c	5.6	5.6	8.0	5.5
6	5.1	6.5	6.5	5.2	4.0	3.9	b	3.5	3.5	b	g	g	b	b	3.5	5.5	4.8	5.4	5.6	c	5.6	8.0	6.8	5.0
7	5.0	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.0
8	3.6	3.2	e	e	3.6	2.2	3.6	3.6	3.6	3.3	3.7	3.6	g	g	g	3.6	c	[5.0]	c	g	4.5	5.0	5.0	4.2
9	3.8	4.0	3.2	3.6	b	b	b	b	b	b	3.7	3.7	3.7	3.5	g	3.8	g	g	2.9	c	4.5	6.0	5.5	4.0
10	3.2	3.7	3.2	5.5	3.0	b	b	b	b	b	b	b	b	g	b	b	3.5	3.5	4.5	c	3.6	5.0	5.0	5.0
11	5.0	5.0	3.7	2.1	b	b	b	b	b	b	b	b	g	b	b	g	c	c	c	c	c	c	c	3.8
12	3.3	3.4	3.6	3.6	3.4	b	b	b	b	g	b	b	b	b	b	3.6	2.8	3.6	3.0	c	3.5	4.4	b	8.5
13	3.5	3.6	5.0	5.0	2.6	b	b	b	3.0	g	g	b	b	3.2	b	b	g	3.1	g	c	3.6	4.6	4.5	4.9
14	3.7	b	3.6	3.2	3.6	b	b	b	b	g	b	b	3.3	g	b	b	c	c	g	c	2.0	4.2	7.0	7.0
15	6.0	3.5	3.6	3.0	3.6	b	b	3.2	3.6	3.6	3.6	4.5	3.6	4.3	b	3.6	g	g	g	c	e	5.0	3.8	2.5
16	5.5	4.0	c	c	c	c	c	c	c	c	c	c	c	c	3.6	3.4	b	b	b	6.5	c	2.0	3.0	8.0
17	3.6	3.5	3.6	3.2	2.0	3.0	g	3.0	3.4	3.3	3.7	3.7	3.6	4.5	5.0	3.6	3.7	3.6	2.5	c	e	e	e	e
18	4.5	3.7	2.7	3.1	e	1.9	2.0	3.5	3.5	3.6	3.5	3.5	g	g	3.6	g	b	b	g	3.6	c	9.0	9.0	9.0
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	c	c	c	c	c	c	3.6	3.6	g	g	g	g	g	c	e	e	4.5	3.6
22	e	3.0	2.2	e	b	b	b	g	g	4.0	g	4.3	5.5	3.5	3.5	4.0	3.5	b	b	b	b	b	b	b
23	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b	g	4.5	4.4	b	3.7	9.0	b	b
24	4.5	4.2	b	5.0	b	b	b	b	b	b	b	b	b	b	4.5	4.0	3.3	3.1	7.0	c	b	5.0	5.0	b
25	b	5.5	b	b	b	b	b	b	b	b	3.6	b	b	b	b	g	b	g	2.4	c	3.6	5.0	4.6	5.0
26	4.0	3.7	3.2	3.6	2.8	2.5	b	2.9	g	b	b	g	b	3.5	g	g	g	b	3.6	c	2.5	3.5	9.0	4.7
27	b	3.6	3.7	c	c	c	c	c	c	c	c	c	c	c	b	b	4.4	b	6.0	c	5.0	b	5.0	5.0
28	4.6	3.5	4.5	3.6	3.5	4.0	g	g	2.8	3.1	4.1	g	2.8	g	g	g	3.5	3.5	4.5	c	4.5	7.5	4.5	3.6
Median	3.8	3.7	3.6	3.6	3.3	3.0	2.0	3.3	3.0	3.3	3.6	3.6	3.3	3.5	3.5	3.4	3.0	3.5	2.9	*	3.6	5.0	5.0	4.9
No.	21	20	18	18	14	9	7	11	13	12	13	13	13	16	15	19	18	18	21		19	21	21	23

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

Time used: 157. 5° E.M.T.

HOURLY VALUES OF h'F2 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	g	b	b	500	470	b	b	400	b	b	470	c	b	b	b	b
2	c	c	c	c	c	c	c	c	c	c	c	c	c	b	500	410	a	350	300	c	250	260	270	280
3	270	240	b	b	200	250	250	210	280	260	300	300	320	320	320	350	290	290	230	c	230	250	250	280
4	280	270	280	300	270	250	260	220	270	310	300	300	300	300	320	330	300	280	280	c	b	b	b	b
5	b	b	b	350	290	250	300	300	300	310	340	370	320	310	310	320	360	260	260	c	350	350	b	b
6	b	b	b	b	300	310	b	250	410	380	370	420	b	420	370	b	400	310	b	c	b	b	b	b
7	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350
8	350	350	350	350	300	260	240	350	350	420	330	380	360	[330]	330	310	c	[250]	c	290	320	210	b	b
9	300	350	b	b	b	b	b	b	b	420	420	700	550	460	400	300	300	320	260	c	350	260	b	b
10	b	b	b	b	b	b	b	b	b	b	b	b	500	450	360	390	300	b	370	c	300	b	b	340
11	b	b	350	350	300	300	b	350	350	b	b	b	360	b	b	310	c	c	c	c	c	c	c	300
12	300	b	b	b	b	b	b	250	g	500	g	b	b	340	310	320	330	330	260	c	350	b	b	b
13	b	b	b	b	350	b	b	270	340	500	350	340	350	350	330	330	300	300	280	c	220	b	b	b
14	350	b	300	b	b	b	b	b	380	330	300	310	350	310	300	300	c	c	250	c	260	300	300	300
15	350	300	b	290	290	b	250	220	300	310	300	300	300	300	300	300	280	260	240	c	250	300	300	300
16	b	400	c	c	c	c	c	c	c	c	c	c	c	c	300	300	300	290	250	b	c	240	240	280
17	290	280	300	350	250	220	230	210	250	260	290	300	300	300	290	300	300	290	290	c	230	230	230	260
18	300	300	300	300	260	250	240	260	310	300	300	300	300	300	300	300	290	230	250	250	c	b	b	b
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	c	c	c	c	c	c	330	360	330	300	310	310	250	c	280	260	300	300
22	300	310	290	300	b	250	250	250	370	350	350	330	b	b	b	b	b	b	b	b	b	b	b	b
23	c	c	c	c	c	c	c	c	c	c	c	b	250	250	340	b	330	b	b	b	370	b	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	500	400	450	360	300	b	c	b	b	b	b
25	b	b	b	b	b	b	280	250	350	400	360	350	350	350	350	350	350	270	230	c	270	b	b	b
26	360	b	300	b	b	300	260	310	400	b	b	320	320	300	320	310	320	280	270	c	300	290	b	350
27	b	b	b	c	c	c	c	c	c	c	c	c	c	c	350	350	250	b	b	c	b	b	b	b
28	b	b	b	b	b	b	260	500	360	600	600	320	330	330	400	400	b	f	b	c	b	b	b	b
29																								
Median	300	(300)	(300)	(325)	290	250	250	250	350	330	340	325	330	330	330	320	300	290	260	*	280	260	(270)	300
No.	11	9	8	8	10	10	11	15	17	15	15	16	18	19	22	22	18	17	17		15	11	7	11

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND h'F2, FEBRUARY 1951

HOURLY VALUES OF hpF2 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	g	b	b	500	470	b	b	400	b	b	470	c	b	b	b	b
2	c	c	c	c	c	c	c	c	c	c	c	c	c	b	500	410	a	350	300	c	270	300	300	310
3	310	260	b	b	220	260	270	240	290	260	300	300	330	320	320	350	290	300	230	c	250	270	270	260
4	290	320	310	330	290	270	270	220	270	310	300	300	300	300	320	330	300	300	300	c	b	b	b	b
5	b	b	b	350	310	270	300	300	300	310	340	370	320	310	310	320	360	260	260	c	350	350	b	b
6	b	b	b	b	300	310	b	250	410	380	370	420	b	420	370	b	400	310	b	c	b	b	b	b
7	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350
8	350	350	350	350	330	260	250	350	350	420	330	380	360	[330]	330	310	c	[280]	c	310	350	250	b	b
9	340	350	b	b	b	b	b	b	b	420	420	700	550	400	400	320	300	320	280	c	350	270	b	b
10	b	b	b	b	b	b	b	b	b	b	b	b	500	450	360	390	300	b	370	c	300	b	b	340
11	b	b	350	350	300	300	b	350	350	b	b	b	360	b	b	330	c	c	c	c	c	c	c	300
12	300	b	b	b	b	b	b	250	g	500	g	b	b	340	310	320	330	330	260	c	350	b	b	b
13	b	b	b	b	350	b	b	270	340	500	350	340	350	350	330	330	300	300	280	c	230	b	b	b
14	350	b	300	b	b	b	b	b	380	330	300	310	350	310	300	300	c	c	270	c	300	300	330	300
15	360	300	b	300	290	b	270	280	310	310	300	300	300	300	300	300	290	280	270	c	300	300	300	350
16	b	400	c	c	c	c	c	c	c	c	c	c	c	c	300	300	300	300	260	b	c	270	240	300
17	330	300	300	350	260	240	230	230	250	260	290	300	300	300	300	300	300	290	300	c	260	260	250	300
18	300	300	300	300	290	270	260	260	310	300	300	300	300	300	300	300	290	280	270	250	c	b	b	b
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	c	c	c	c	c	c	330	360	330	300	310	310	260	c	290	290	310	320
22	320	350	300	310	b	250	250	250	370	350	350	330	b	b	b	b	b	b	b	b	b	b	b	b
23	c	c	c	c	c	c	c	c	c	c	c	b	250	250	340	b	330	b	b	b	370	b	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	500	400	450	360	300	b	c	b	b	b	b
25	b	b	b	b	b	b	280	250	350	400	360	350	350	350	350	350	350	290	250	c	300	b	b	b
26	360	b	300	b	b	300	270	320	400	b	b	320	320	300	320	310	320	300	300	c	310	300	b	350
27	b	b	b	c	c	c	c	c	c	c	c	c	c	c	350	350	250	b	b	c	b	b	b	b
28	b	b	b	b	b	b	260	500	360	600	600	320	330	330	400	400	b	f	b	c	b	b	b	b
Median	330	(320)	(300)	(340)	295	270	270	260	350	350	340	325	330	330	330	325	300	300	270	*	300	290	(300)	310
No.	11	9	8	8	10	10	11	15	17	15	15	16	18	19	22	22	18	17	17		15	11	7	11

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND hpF2, FEBRUARY 1951

HOURLY VALUES OF h'F1 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17	18
1		c	200	b	b	200	200	b	b	b	b	b	b
2		c	c	c	c	c	c	200	210	210	a	b	b
3		q	a	a	a	a	200	200	200	230	a	220	q
4		q	210	200	180	210	200	200	210	210	200	220	230
5	230	210	200	200	200	200	200	210	210	210	250	250	q
6		q	250	250	200	210	b	210	b	b	a	a	b
7		c	c	c	c	c	c	c	c	c	c	c	c
8		260	210	220	200	190	200	[210]	210	220	c	c	c
9		b	b	b	210	210	200	210	200	210	210	220	q
10		b	b	b	b	b	220	200	190	210	250	b	
11		210	220	b	b	b	200	b	b	200	c	c	c
12		q	250	220	210	b	b	250	210	210	230	230	250
13		q	230	210	200	200	200	210	210	230	220	230	q
14		b	220	200	200	200	200	200	210	210	c	c	q
15		q	200	210	200	200	200	200	200	200	200	q	q
16		c	c	c	c	c	c	c	210	200	210	210	220
17		q	200	200	200	210	200	200	200	200	210	210	q
18		220	210	200	200	200	200	200	200	210	230	q	q
19		c	c	c	c	c	c	c	c	c	c	c	c
20		c	c	c	c	c	c	c	c	c	c	c	c
21		c	c	c	c	c	200	200	210	210	210	220	q
22		210	210	220	250	a	b	b	b	b	b	b	b
23		c	c	c	c	b	b	230	210	b	240	b	b
24		b	b	b	b	b	250	200	200	250	230	250	b
25		q	250	220	230	200	210	210	210	210	240	240	q
26		250	220	b	b	220	200	210	210	230	220	q	q
27		c	c	c	c	c	c	c	b	b	b	b	b
28		250	220	220	220	200	200	230	260	b	b	b	b
Median	*	220	215	210	200	200	200	205	210	210	220	220	*
No.		7	16	13	14	14	18	20	20	19	15	11	

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND h'F1.FEBRUARY 1951

HOURLY VALUES OF h'E OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	110	b	b	100	b	b	b	b	b	a	a	c
2	c	c	c	c	c	c	c	a	a	110	a	130	110	c
3	a	a	a	a	a	a	a	a	a	a	a	100	110	c
4	110	b	100	100	100	100	100	100	100	110	120	110	110	c
5	110	110	110	110	110	110	110	110	110	110	110	120	120	c
6	b	b	a	b	110	110	b	b	b	a	a	a	a	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c
8	b	b	120	100	110	100	100	[100]	100	100	c	c	c	130
9	b	b	b	b	110	110	110	110	110	110	110	110	110	c
10	b	b	b	b	b	b	b	b	b	b	a	a	a	c
11	b	b	b	b	b	b	b	b	b	110	c	c	c	c
12	b	b	b	110	b	b	b	b	b	b	b	110	120	c
13	b	b	110	110	100	b	b	a	b	b	110	110	120	c
14	b	b	b	110	b	b	b	100	b	b	c	c	120	c
15	b	100	110	b	a	110	a	a	b	a	100	100	110	c
16	c	c	c	c	c	c	c	c	a	100	b	b	b	a
17	100	110	100	100	100	a	a	a	a	a	a	a	110	c
18	110	100	a	a	110	100	110	110	110	110	b	b	b	a
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	a	110	110	110	110	110	120	c
22	b	110	110	110	110	a	a	a	a	a	a	b	b	b
23	c	c	c	c	c	b	b	b	b	b	110	a	a	b
24	b	b	b	b	b	b	b	b	110	a	110	110	a	c
25	b	b	b	b	a	b	b	b	b	110	b	110	a	c
26	b	a	110	b	b	100	b	b	100	110	110	b	a	c
27	c	c	c	c	c	c	c	c	b	b	b	b	b	c
28	100	110	110	a	a	100	100	100	110	b	b	b	b	c
Median	110	110	110	110	110	100	105	105	110	110	110	110	110	*
No.	5	6	10	8	9	10	6	8	9	11	9	11	11	

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND h'E , FEBRUARY 1951

HOURLY VALUES OF h'Es OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

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	100	c	c	c	c	c	c	c	g	b	b	g	b	b	b	b	b	110	120	c	120	110	110	110
2	c	c	c	c	c	c	c	c	c	c	c	c	c	110	110	g	110	110	110	c	150	120	120	130
3	110	110	100	100	100	100	100	100	100	100	100	100	100	100	100	100	110	110	110	c	120	e	e	e
4	e	e	110	100	e	110	g	110	g	g	g	g	g	g	g	g	g	g	g	c	b	b	120	110
5	100	100	100	100	110	120	120	110	g	110	g	110	g	110	g	g	g	g	g	c	110	120	110	110
6	100	110	110	120	120	130	b	110	110	b	g	g	b	b	110	110	110	110	110	c	110	110	110	110
7	110	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	120
8	120	120	e	e	100	100	100	100	100	100	100	100	g	g	g	130	c	[120]	c	g	110	110	110	100
9	100	110	100	100	b	b	b	b	b	b	110	110	110	110	g	120	g	g	110	c	110	100	100	100
10	100	100	100	100	100	b	b	b	b	b	b	b	b	b	b	b	110	110	100	c	110	100	100	100
11	100	100	100	110	b	b	b	b	b	b	b	b	g	b	b	g	c	c	c	c	c	c	c	100
12	110	100	110	100	100	b	b	b	b	g	b	b	b	b	b	110	110	110	140	c	100	100	b	100
13	100	100	100	100	100	b	b	b	110	g	g	b	b	110	b	b	g	120	g	c	110	110	110	100
14	100	b	100	100	100	b	b	b	b	g	b	b	100	g	b	b	c	c	g	c	150	110	110	100
15	100	100	100	120	100	b	b	110	120	110	100	100	110	100	b	100	g	g	g	c	e	100	100	100
16	100	100	c	c	c	c	c	c	c	c	c	c	c	c	100	110	b	b	b	110	c	150	120	100
17	100	100	100	100	100	100	g	110	110	110	110	100	110	100	100	100	100	100	120	c	e	e	e	e
18	100	100	110	130	e	100	110	100	100	100	110	100	g	g	110	g	b	b	g	130	c	110	110	110
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	c	c	c	c	c	c	110	110	g	g	g	g	g	c	e	e	100	110
22	e	110	150	e	b	b	b	g	g	120	g	110	110	110	110	120	100	b	b	b	b	b	b	b
23	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b	g	110	110	b	120	110	b	b
24	100	100	b	100	b	b	b	b	b	b	b	b	b	b	150	100	120	120	110	c	b	110	110	b
25	b	110	b	b	b	b	b	b	b	b	100	b	b	b	b	g	b	g	120	c	110	100	100	100
26	100	100	100	100	110	100	b	110	g	b	b	g	b	110	g	g	g	b	140	c	130	120	100	100
27	b	100	100	c	c	c	c	c	c	c	c	c	c	c	b	b	110	b	100	c	110	b	100	100
28	100	100	100	100	100	100	g	g	110	110	110	g	100	g	g	g	110	150	110	c	100	100	100	110
Median	100	100	100	100	100	100	*	110	110	110	105	100	110	110	110	110	110	110	110	*	110	110	110	100
No.	19	19	17	16	12	9		9	8	8	8	8	8	10	8	10	10	12	14		16	18	19	21

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND h'Es, FEBRUARY 1951

HOURLY VALUES OF (M 3000) F2 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	g	b	b	2.6	2.8	b	b	3.0f	b	b	2.7	c	b	b	b	b
2	c	c	c	c	c	c	c	c	c	c	c	c	c	b	2.7f	2.7f	a	2.8	3.0	c	2.9	3.0	2.8	2.8f
3	2.6	3.1	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.0f	3.0f	2.8f	3.0f
4	2.9f	2.9f	3.0f	2.7f	3.0f	3.4f	3.3f	3.5f	3.2	3.4	3.3	3.1	3.3	3.2	3.2	3.1	3.0	3.0	3.4	c	b	b	b	b
5	b	b	b	3.1	3.1f	3.2f	3.2	3.0	2.9	3.1	3.2	3.2	3.2	2.9	3.2	c	c	c	3.2	c	3.0f	3.0f	b	b
6	b	b	b	b	3.0f	3.0f	b	3.2f	2.8f	2.6f	2.8f	2.7f	b	2.7f	3.0f	b	2.7f	2.8	b	c	b	b	b	b
7	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	[2.7f]
8	2.6f	2.6f	2.7f	2.5f	f	3.0f	3.0f	3.2f	3.0	2.9	2.9	c	3.0	[3.0]	3.0	3.1	c	[3.1]	c	2.8f	2.8f	3.2f	b	b
9	2.8f	2.7f	b	b	b	b	b	b	b	2.7f	2.8	(2.3f)	(2.5f)	(2.7f)	(2.7f)	3.0f	3.1f	2.8f	2.8	c	2.9	3.4	b	b
10	b	b	b	b	b	b	b	b	b	b	b	b	2.6f	2.7f	2.9f	2.8f	2.8f	b	2.9f	c	3.0f	b	b	3.0f
11	b	b	f	2.8f	(2.7f)	3.0f	b	2.9	2.8	b	b	b	3.0	b	b	2.9f	c	c	c	c	c	c	c	3.1f
12	3.0f	b	b	b	b	b	b	3.5	g	2.7	g	b	b	3.0	3.0	2.7	2.8f	2.7f	3.3	c	2.9f	b	b	b
13	b	b	b	b	(2.9f)	b	b	3.8	c	2.8	3.0	3.1	3.1	3.0	3.0	3.1	3.1	3.3	2.8	c	3.2	b	b	b
14	3.0f	b	3.0f	b	b	b	b	b	3.2	3.6	3.3	3.1	3.1	4.1	3.1	3.2	c	c	3.3	c	3.0	3.0	3.0	3.0f
15	c	3.0f	b	3.1f	3.5f	b	3.3	3.1	3.1	3.3	3.2	3.1	3.2	3.4	3.3	3.1	3.3	3.1	c	c	3.0	3.0	3.0	3.0f
16	b	f	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.3	3.2	3.3	3.3	b	c	3.2f	3.0f	3.0f
17	3.0f	3.1f	3.0f	2.8f	3.1f	3.2f	3.5f	3.5f	3.5	3.4	3.5	3.1	3.3	3.3	3.3	3.3	3.3	3.1	3.1	c	3.2	3.0	3.3	3.0f
18	3.5f	3.0f	3.1f	3.0f	3.0f	3.3f	3.3	3.4	3.0	3.4	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.0	3.3	c	b	b	b
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	c	c	c	c	c	c	c	3.1	3.0	3.0	3.2	3.1	2.9	3.4	c	2.8f	3.0f	3.0f	3.0f
22	2.9f	2.8f	2.8f	2.9f	b	3.4f	3.0f	3.4	2.8f	2.9f	3.0	3.1	b	b	b	b	b	b	b	b	b	b	b	b
23	c	c	c	c	c	c	c	c	c	c	c	b	3.4	b	2.9f	b	3.1	b	b	b	2.8f	b	b	b
24	b	b	b	b	b	b	b	b	b	b	b	b	b	2.6	2.8	2.7	2.8	2.9	b	c	b	b	b	b
25	b	b	b	b	b	b	3.0	2.9	3.1	2.9	3.0	3.0	3.1	3.0	3.0	3.0	2.8	2.8	3.3	c	2.8	b	b	b
26	2.8f	b	3.0	b	b	2.7f	3.0	3.1	2.8	b	b	3.1	3.2	3.2	3.0	3.0	2.9	2.8	2.9	c	2.8f	3.0f	b	3.0f
27	b	b	b	c	c	c	c	c	c	c	c	c	c	c	2.8	3.1	3.5f	b	b	c	b	b	b	b
28	b	b	b	b	b	b	3.0f	f	3.0	2.4	2.5	3.3	3.0	2.5	2.8	2.7	b	f	b	c	b	b	b	b
Median	2.9f	(3.0f)	(3.0f)	(2.8f)	(3.0f)	(3.2f)	3.1f	3.2	3.0	2.9	3.0	3.1	3.1	3.0	3.0	3.0	3.1	2.9	3.1	*	2.9f	3.0f	(3.0)	3.0f
No.	10	8	7	8	8	9	10	13	15	14	14	14	17	17	21	20	16	15	15		15	11	7	11

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND (M 3000) F2, FEBRUARY 1951

HOURLY VALUES OF (M 3000)F1 OBSERVED DURING FEBRUARY 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17	18
1	c	3.8	b	b	3.7	4.0	b	b	b	b	b	b
2	c	c	c	c	c	c	3.6	3.7	3.7	a	b	b
3	q	a	a	a	a	4.0	4.0	4.0	3.9	a	3.8	q
4	q	3.8	4.1	3.7	3.7	3.8	3.8	3.6	3.6	4.2	3.8	4.0
5	3.8	3.6	3.7	3.8	3.8	3.7	3.9	3.7	3.8	3.5	3.9	q
6	q	3.5f	3.5f	3.5f	3.5f	b	3.9	b	b	a	a	b
7	c	c	c	c	c	c	c	c	c	c	c	c
8	3.5	3.5	3.5	3.6	3.7	3.7	[3.6]	3.6	3.6	c	c	c
9	b	b	b	3.5	3.6	3.6	3.7	3.5	3.6	3.6	3.5	q
10	b	b	b	b	b	3.7	3.7	3.6	3.4	1	b	a
11	1	3.4	b	b	b	3.6	b	b	3.5	c	c	c
12	q	1	3.7	3.7	b	b	3.6	c	3.6	1	3.8	1
13	q	3.6	3.7	3.7	3.7	3.8	3.6	3.6	3.6	3.4	3.8	q
14	b	3.8	3.8	3.5	3.7	3.6	3.8	3.6	3.7	c	c	q
15	q	3.5	3.6	3.8	3.7	3.8	3.8	3.7	3.7	3.8	q	q
16	c	c	c	c	c	c	c	3.9	3.6	3.9	3.9	1
17	q	3.9	3.7	4.0	3.8	4.0	3.9	3.7	3.9	3.7	3.9	q
18	1	3.5	3.7	3.7	4.0	3.8	3.9	3.9	3.9	4.0	q	q
19	c	c	c	c	c	c	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c
21	c	c	c	c	c	3.9	3.5	3.6	3.5	3.6	3.6	q
22	4.1	3.8	3.5	3.2	a	b	b	b	b	b	b	b
23	c	c	c	c	b	b	1	3.6	b	3.5	b	b
24	b	b	b	b	b	3.6	3.6	3.5	3.4	3.4	3.7	b
25	q	3.4	3.5	3.6	3.5	3.8	3.6	3.6	3.6	3.5	1	q
26	1	3.5	b	b	3.6	3.7	3.7	3.6	3.5	3.5	q	q
27	c	c	c	c	c	c	c	b	b	b	b	b
28	3.4	3.5	3.5	3.6	4.0	3.6	4.0	3.6	b	b	b	b
Median No.	*	3.5 15	3.7 13	3.6 14	3.7 14	3.8 18	3.7 19	3.6 19	3.6 19	3.6 13	3.8 10	*

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157. 5° E.M.T. MACQUARIE ISLAND (M 3000)F1, FEBRUARY 1951

HOURLY VALUES OF f°F2 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	b	b	2.2f	2.6f	2.3f	2.8f	4.2f	5.1	5.6f	6.1f	6.0	6.1
2	b	4.5f	b	3.6	3.5f	3.6f	4.3f	5.0	5.2	5.6	6.0	6.1
3	4.0f	b	3.3f	3.3f	3.0f	3.8	4.5	5.6	6.0	6.1	6.7	6.7
4	c	c	c	c	c	c	c	c	c	c	6.0	6.1
5	4.5f	(4.5)f	4.4f	4.1f	3.5f	3.2f	4.2f	4.6f	5.2	5.8	5.8	6.0
6	3.6f	2.9f	b	3.6f	3.6f	3.6f	4.2f	4.6	5.1	5.3	5.5	5.7
7	b	b	b	3.1f	b	2.6f	3.6f	3.9	(4.3)	(4.5)f	4.7f	4.7
8	c	c	c	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c
11	b	b	b	2.9f	b	b	b	b	4.3	4.3	5.0	b
12	b	b	b	b	2.9f	b	c	c	c	c	4.3	4.5
13	b	b	b	b	b	2.5f	3.2f	b	3.8	4.2	4.5	4.6
14	b	b	b	b	b	c	c	c	c	c	c	c
15	b	b	b	b	b	b	b	b	b	b	4.9	5.0
16	3.6f	3.5f	2.0f	1.9f	b	b	3.2f	3.8	4.5f	4.9f	5.0f	5.5
17	4.1f	b	4.4f	3.5f	3.2f	2.9f	3.1	3.8	4.2	5.0	5.3	5.4
18	3.5f	b	b	b	b	b	b	3.7	4.3	4.4	4.9	c
19	b	b	3.5f	3.0f	2.8f	2.4f	3.4	4.3	4.9	5.2	6.0	5.8
20	3.3f	3.4f	2.6f	2.6f	3.0f	2.8f	3.1	4.4	5.0	5.5	6.0	6.1
21	b	b	4.6f	4.6f	4.2f	4.1f	3.6f	4.7f	5.8	6.6	6.7	6.6
22	4.9f	4.6f	4.0f	4.5f	4.2f	3.4f	3.1f	4.4f	5.2f	5.7	6.4	6.4f
23	c	c	c	c	c	c	c	c	c	c	c	c
24	b	b	b	b	b	b	b	3.6	b	4.5	5.1	5.4
25	b	b	b	b	b	b	b	b	4.5	b	5.0	5.5
26	b	b	4.5f	b	b	b	b	b	3.3f	4.9	7.0	7.4
27	b	b	b	b	4.1f	3.6f	3.4f	3.2f	2.9f	b	4.8	5.2f
28	b	b	b	b	b	b	b	4.4f	5.1	6.0	6.5	6.0
29	3.5f	3.1f	3.1f	2.9f	2.6f	3.1f	3.7f	5.9f	6.6	6.7	6.8	7.5
30	b	b	b	c	b	b	3.5f	b	3.5f	3.7	b	4.5
31	3.5f	4.0f	3.8f	2.7f	2.6f	2.3f	4.1	6.0	7.0	(4.6)	7.0	7.5
Median	3.6f	(3.8)f	3.6f	3.1f	3.1f	3.1f	3.6f	4.5	5.0	5.2	5.8	5.9
No	10	8	12	15	14	15	17	18	22	21	25	24

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

Time used: 157.5°E.M.T.

MACQUARIE ISLAND f°F2, MARCH 1951

HOURLY VALUES OF f°F2 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	6.8	6.8	7.0	7.0	6.5	6.0f	6.0f	c	b	b	b	b
2	6.1	6.1	6.4	6.4	6.4	6.5	6.7	c	5.7	4.8	4.6f	4.8f
3	6.9	7.0	6.7	c	c	c	c	c	c	c	c	c
4	6.4	6.3	6.0	6.0	6.3	5.0	7.0	c	5.4	4.6	3.2	3.6
5	5.7	5.7	6.0	6.0	6.0	c	c	6.6	5.5	3.7	4.2	4.4f
6	6.0	6.0	6.0	5.9	6.8	b	5.5f	c	b	b	b	b
7	5.2	5.1	5.1	5.7	5.7	5.3	4.9	c	c	c	c	c
8	c	b	4.4	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	6.4	b	6.0f	b	4.4f	c	b	b	b	b
11	b	b	b	5.7	5.7f	5.5f	5.1f	c	b	b	b	b
12	4.5	5.0	5.4	5.6f	6.0f	4.6f	4.3f	c	b	b	b	b
13	4.9	5.0	5.0	4.7	4.9f	5.5	5.5f	[4.3]	c	c	b	3.7f
14	b	4.7	4.7f	b	b	b	4.2	c	b	b	b	b
15	5.0	c	6.0f	6.0f	5.0f	4.2f	3.5f	c	c	3.0f	b	b
16	5.9	5.8	6.2	6.6	7.0	7.0	6.5f	c	5.5f	b	b	b
17	5.7	5.7	5.8	5.7	5.7	5.5	5.5	5.5f	b	b	b	4.5f
18	c	c	c	c	c	5.5	5.5	c	b	b	b	b
19	b	5.8	6.5f	6.0	6.2	6.2	4.4f	c	5.5f	4.0f	4.0f	3.6f
20	6.1	6.0	6.0	6.1	6.1	6.0	6.1	c	6.2	5.3	b	b
21	6.9	6.8	6.7	7.0	6.6	6.9	6.5	[4.5]f	4.5f	5.8f	4.6f	4.5f
22	7.0	6.7f	7.0f	7.1f	7.0	c	c	c	c	c	c	c
23	c	c	c	7.0	6.8	5.6f	5.0f	c	b	b	b	b
24	b	6.0	5.5	6.2	6.0	6.6	5.6	c	5.0f	b	b	b
25	5.4	5.6f	b	b	b	5.5	5.5	c	b	b	b	b
26	8.5	9.5	9.5	9.6	9.6	8.5	8.7	[9.1]	c	8.5	8.5f	4.8f
27	5.3	6.2	6.2	6.5	c	c	c	c	c	c	3.6f	b
28	6.0	7.0	6.6	7.1	7.5	7.5f	7.0f	c	6.0f	4.6f	4.0f	4.0f
29	7.5	7.5	7.5	8.0	8.0	6.1	6.0f	c	3.7	b	4.0	b
30	4.6	b	4.8	5.4f	5.4	5.6	5.6	c	4.5f	3.0f	b	b
31	7.2	7.6	7.4	7.0	6.9	7.1	7.2	c	7.0f	3.5f	4.5f	4.6f
Median	6.0	6.1	6.1	6.2	6.2	5.8	5.5	(5.5f)	5.5f	4.6f	4.1f	4.4f
No	22	23	26	24	24	22	25	5	11	11	10	10

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5h E.M.T.

HOURLY VALUES OF foF1 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1	q	4.4	4.4	4.4	4.3	4.4	4.4	4.5	4.4	4.2	q
2	3.8	4.1	4.4	4.0	4.4	4.4	4.4	4.4	4.2	1	q
3	q	4.1	4.2	4.4	4.5	4.4	4.5	4.4	c	c	c
4	c	c	c	4.5	4.4	4.4	4.4	4.4	4.4	4.2	1
5	q	4.3	4.3	4.5	4.5	4.5	4.3	4.4	4.5	1	c
6	q	4.0	4.2	4.2	4.3	4.4	4.5	4.2	4.0	b	b
7	q	3.9	4.1f	4.3f	4.4	4.3	4.2	4.1	4.0	q	q
8	c	c	c	c	c	c	b	4.1	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	b	b	b	b
11	b	3.8	3.8	4.0	b	b	b	b	4.0	3.7f	3.5f
12	c	c	c	4.2	4.0	4.0	4.2	4.0	4.2	3.6f	3.5f
13	b	q	4.0	4.2	4.2	4.2	4.2	4.0	4.0	3.9	3.5
14	c	c	c	c	c	b	4.2	3.9	b	b	b
15	b	b	b	4.0	4.0	4.0	c	3.6f	4.0f	3.4f	3.3f
16	q	q	q	a	4.4	4.2	4.5	4.5	3.8	1	q
17	q	q	q	3.9	4.2	4.2	4.2	4.2	4.2	1	q
18	q	q	3.9	3.8	c	c	c	c	c	c	b
19	q	3.6	4.0	4.2	4.3	b	4.4	4.5	4.0	b	q
20	q	3.6	4.0	4.2	4.3	4.5	4.5	4.3	4.0	4.1	q
21	q	q	4.1	4.2	4.4	4.4	4.5	4.3	3.7	q	q
22	q	q	4.0	4.1	4.4f	4.4	4.5	4.5	4.2	q	c
23	c	c	c	c	c	c	c	c	4.5	3.7	q
24	b	b	b	4.2	4.3	b	4.4	4.4	4.3	3.6	b
25	b	b	b	4.3	4.3	4.4	4.3	b	b	b	q
26	b	q	q	q	1	4.8	b	b	4.4	4.5	b
27	b	b	b	b	3.8	4.4	4.3	4.5	4.5	c	c
28	q	q	1	4.5	4.5	4.3	4.4	1	1	q	q
29	q	q	1	4.4	1	4.2	1	1	1	q	q
30	b	b	b	b	4.0	4.1	4.3	4.1	4.5	q	b
31	q	q	q	q	4.0	1	4.5	1	q	q	q
Median	*	4.0	4.1	4.2	4.3	4.4	4.4	4.3	4.2	3.8	*
No		9	13	21	22	21	22	21	21	10	

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND foF1, MARCH 1951

HOURLY VALUES OF foE OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Day \ Hour	06	07	08	09	10	11	12	13	14	15	16	17	18
1	2.0	2.6	3.0	a	3.2	3.4	3.2	b	(3.2)	(3.0)	(2.8)	2.7	2.6
2	2.1	2.6	2.9	3.0	3.2	3.3	(3.4)	(3.4)	(3.4)	(3.1)	(2.5)	2.3	2.0
3	a	a	2.8	3.1	a	3.2	3.2	3.2	3.0	c	c	c	c
4	c	c	c	c	3.1	(3.1)	(3.2)	(3.2)	(3.1)	(2.9)	(2.8)	(2.4)	(2.0)
5	(2.0)	(2.5)	2.7	(2.9)	(3.0)	(3.0)	(3.2)	(3.2)	(3.0)	(2.9)	(2.7)	c	c
6	(2.1)	(2.6)	(2.7)	(2.9)	(3.1)	(3.1)	(3.2)	(3.2)	(3.1)	(2.8)	(2.6)	b	b
7	2.1	2.6	2.8	3.0	(3.4)f	(3.3)	(3.0)	b	(2.7)	(2.8)	(2.5)	(2.1)	a
8	c	c	c	c	c	c	c	b	2.8	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	b	b	b	b	b
11	b	b	b	b	b	b	b	b	b	b	b	b	b
12	c	c	c	c	2.9	(3.0)	b	(3.1)	b	b	b	b	b
13	b	b	b	b	(3.0)	(3.0)	b	b	b	(2.6)	b	b	b
14	c	c	c	c	c	c	b	b	(3.0)	b	b	b	(3.5)
15	b	b	b	b	b	b	b	c	2.9	3.2	(3.2)	(2.8)f	b
16	b	(2.2)	2.4	(2.6)	a	a	3.0	3.0	3.0	(2.8)	(2.7)	(2.0)	2.0
17	b	2.0	2.4	2.8	2.9	a	a	a	3.0	(2.8)	(2.6)	(2.2)	b
18	a	2.0	2.4	2.8	(2.9)	c	c	c	c	c	c	b	b
19	b	(2.0)	(2.4)	(2.6)	(2.6)	(3.1)	b	b	(3.1)	b	(b)	(2.0)	(1.9)f
20	1.4	2.0	(2.7)	(3.7)	(3.1)	(3.1)	(3.1)	(3.0)	(3.0)	(2.9)	(2.8)	(2.3)	(1.5)
21	e	(2.2)	(2.3)	(2.7)	(3.0)	(3.0)	(3.1)	(3.1)	(3.0)	(2.6)	(2.5)	(2.2)	(2.0)
22	e	(2.0)	(2.5)	(2.7)	(2.9)	(3.1)	(3.1)	(3.1)	(3.1)	(2.8(	2.7	c	c
23	c	c	c	c	c	c	c	c	c	b	(2.8)	2.1	a
24	b	b	b	b	b	3.0	b	3.1	(3.1)	b	a	2.0	(2.0)
25	b	b	b	b	b	b	3.1	3.1	b	b	b	a	2.1
26	b	b	a	2.3	(2.5)	(2.8)	(3.0)	b	b	b	3.0	b	b
27	b	b	b	b	b	b	b	b	b	a	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c
29	e	2.4	(2.6)	(2.7)	3.0	(3.1)	(3.1)	(3.1)	(2.9)	2.7	(2.6)	a	a
30	b	b	2.5	b	b	b	3.1	b	b	b	b	2.1	a
31	1.7	2.1	(2.6)	(2.6)	(2.6)	a	a	3.0	(2.8)	(2.7)	(2.2)	1.9	e
Median	1.8	2.2	2.6	2.8	3.0	3.1	3.1	3.1	3.0	2.8	2.7	2.2	2.0
No	10	14	16	15	17	16	15	14	19	15	16	14	11

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

Time used: 157.5°E.M.T.

HOURLY VALUES OF f Es OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

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	3.6	2.6	1.8	2.0	3.2	3.2	g	2.8	g	3.3	3.3	g	g	b	g	3.6	g	3.5	g	c	6.5	4.8	7.0	b
2	4.5	4.5	5.5	4.6	4.6	3.7	3.5	3.6	g	3.5	3.5	g	3.6	3.5	g	3.3	g	2.6	g	c	e	e	3.4	4.6
3	3.6	b	2.7	2.0	2.0	3.5	2.4	3.0	3.1	g	3.7	g	g	g	g	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	g	g	g	g	g	g	g	g	g	c	2.0	e	e	3.2
5	4.0	5.8	3.2	b	e	e	g	g	g	4.0	3.5	g	g	g	3.5	g	g	e	e	e	e	e	3.7	e
6	4.9	3.1	3.6	3.7	e	e	g	g	g	g	g	g	g	g	g	g	g	b	b	c	4.5	4.5	b	4.4
7	3.6	4.6	3.5	2.6	3.6	b	3.2	g	2.6	4.3	g	3.8	3.2	b	g	g	3.2	5.2	3.6	c	c	c	c	c
8	c	c	c	c	c	c	c	c	c	c	c	c	c	b	g	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	4.0	e	4.0	3.4	c	4.0	b	4.0	5.5
11	b	b	3.5	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	3.6	c	b	4.5	b	b
12	b	b	3.6	b	3.5	b	c	c	c	c	g	g	3.6	g	b	b	b	b	3.5	c	b	b	b	4.5
13	4.3	b	b	b	3.6	2.2	3.4	b	b	b	3.3	g	b	b	b	g	b	b	2.1	7.5	c	c	b	3.6
14	4.0	b	b	b	b	c	c	c	c	c	c	c	b	b	g	b	6.0	3.6	4.2	c	3.6	4.2	4.4	b
15	b	9.0	9.0	b	5.0	b	b	b	b	b	b	b	b	c	g	g	g	g	4.5	c	c	3.6	3.6	3.8
16	4.6	3.6	e	e	3.2	b	2.0	7.0	2.7	4.0	5.0	3.6	3.2	g	g	g	g	3.2	g	c	4.5	4.0	b	4.6
17	3.9	4.6	3.6	2.0	e	e	g	g	g	3.6	4.0	3.3	3.4	3.1	3.3	g	g	g	3.5	7.5	4.5	6.5	4.5	3.2
18	3.2	4.0	4.0	3.6	5.0	3.6	3.6	g	g	g	g	c	c	c	c	c	c	e	3.6	c	7.0	4.5	3.7	4.2
19	4.5	4.2	3.6	3.8	e	e	g	g	g	3.4	3.0	g	b	b	g	b	b	g	g	c	2.0	4.3	3.8	2.7
20	2.0	2.2	3.6	2.0	e	e	g	g	g	g	g	g	3.4	g	g	3.5	g	g	2.1	c	e	e	6.5	4.4
21	4.6	4.6	4.2	3.6	3.5	3.1	3.1	3.3	g	g	3.8	g	g	g	g	g	g	g	g	c	3.8	3.0	4.2	3.6
22	3.6	3.1	3.4	3.1	e	e	g	g	g	g	g	g	g	g	g	g	g	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	g	3.5	5.6	c	5.3	5.4	b	b
24	b	b	4.2	b	b	b	3.6	b	b	b	b	g	b	g	g	b	3.5	g	3.6	c	4.3	4.3	5.0	b
25	3.6	5.0	b	b	3.5	b	b	b	b	b	b	b	g	g	b	b	b	2.7	g	c	5.6	b	4.5	4.5
26	3.8	5.0	4.9	5.4	3.6	b	b	b	1.8	g	g	g	g	b	b	b	g	b	b	b	c	b	b	3.6
27	5.0	b	4.0	b	3.7	3.1	2.5	g	b	b	b	b	b	b	b	3.3	c	c	c	c	c	c	3.7	6.0
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
29	3.5	3.3	3.4	e	e	e	g	g	g	3.5	g	g	g	3.5	g	g	g	4.0	5.0	c	4.5	3.8	b	b
30	b	b	6.0	c	4.5	4.2	b	b	g	b	b	b	g	b	b	b	b	g	2.5	c	2.5	3.5	4.6	4.5
31	3.6	3.5	3.4	e	e	e	g	g	g	4.5	3.2	3.6	3.6	3.5	g	g	g	g	2.7	c	4.5	4.0	5.0	3.6
Median	3.8	4.2	3.6	2.6	3.4	2.2	2.0	**	**	3.4	3.0	**	**	**	**	**	**	**	3.0	*	4.3	4.0	4.2	4.2
No	20	17	22	15	22	16	18	16	17	16	19	19	18	15	19	17	19	19	22		19	19	17	19

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° .M.T.

HOURLY VALUES OF h'F2 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

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	400	500	380	250	220	220	320	350	300	310	350	350	330	310	310	210	270	c	b	b	b	b
2	b	350	b	300	300	250	240	310	320	320	290	300	350	320	330	300	280	260	250	c	210	210	250	270
3	300	b	270	300	300	220	200	210	240	260	260	300	300	310	300	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	250	300	300	270	300	300	300	240	240	c	210	200	250	300
5	300	300	260	240	220	240	220	210	300	300	300	300	300	300	310	290	290	c	c	200	200	220	280	260
6	300	300	b	290	270	240	200	200	300	300	300	320	310	310	300	330	280	b	330	c	b	b	b	b
7	b	b	b	300	b	270	250	230	500	400	400	400	360	380	340	320	300	300	250	c	c	c	c	c
8	c	c	c	c	c	c	c	c	c	c	c	c	c	b	500	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	270	b	300	b	400	c	b	b	b	b
11	b	b	b	350	b	b	b	b	400	450	380	b	b	b	b	300	300	330	360	c	b	b	b	b
12	b	b	b	b	350	b	c	c	c	c	600	400	500	400	340	320	350	360	290	c	b	b	b	b
13	b	b	b	b	b	370	300	b	250	500	450	450	400	380	360	380	410	310	270	310	c	c	b	350
14	b	b	b	b	b	c	c	c	c	c	c	c	b	360	400	b	b	b	220	c	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	420	300	310	c	360	310	300	320	400	c	c	350	b	b
16	300	350	400	400	b	b	250	230	220	210	210	300	300	300	300	280	220	230	250	c	300	b	b	b
17	400	b	350	300	260	250	250	240	210	330	320	330	300	300	300	310	280	250	300	300	b	b	b	270
18	360	b	b	b	b	b	b	260	230	330	300	c	c	c	c	c	c	250	250	c	b	b	b	b
19	b	b	350	350	300	320	210	250	290	320	320	300	b	310	300	280	250	250	280	c	250	300	370	350
20	330	350	350	330	300	260	250	240	290	300	280	300	310	300	300	270	270	270	230	c	230	250	b	b
21	b	b	350	310	300	250	250	240	230	260	260	280	280	280	270	270	250	250	270	270	300	280	300	330
22	300	300	310	300	300	300	250	220	210	250	270	260	300	300	280	300	260	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	300	260	230	c	b	b	b	b
24	b	b	b	b	b	b	b	350	b	250	400	400	b	330	320	330	280	260	270	c	300	b	b	b
25	b	b	b	b	b	b	b	b	260	b	420	400	400	380	b	b	b	250	250	c	b	b	b	b
26	b	b	390	b	b	b	b	b	270	240	240	260	260	250	250	250	250	250	240	[240]	c	230	250	270
27	b	b	b	b	b	400	330	310	300	b	250	310	340	310	300	310	c	c	c	c	c	c	380	b
28	b	b	b	b	b	b	b	250	230	300	260	280	290	280	280	270	240	240	230	c	220	250	220	300
29	350	290	300	300	300	260	210	230	280	260	260	260	250	250	260	240	250	350	360	c	260	b	250	b
30	b	b	b	c	b	b	380	b	280	260	b	550	500	b	500	400	240	320	250	c	260	350	b	b
31	300	350	280	300	270	280	250	230	260	270	270	260	270	270	260	220	220	220	240	c	240	310	300	270
Median	300	(325)	350	300	300	260	250	235	275	300	300	300	305	310	300	300	280	260	270	(270)	245	250	265	285
No	10	8	12	15	13	15	17	18	22	21	25	24	22	23	26	24	24	22	25	5	12	11	10	10

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

Time used: 137.5° E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

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	400	500	380	260	230	220	330	350	300	310	350	350	330	310	310	210	280	c	b	b	b	b
2	b	350	b	300	300	250	240	310	320	320	300	300	350	320	330	300	280	290	260	c	240	250	260	280
3	300	b	280	300	300	220	210	230	260	260	270	300	300	310	300	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	250	300	300	270	300	300	210	270	270	c	260	230	270	300
5	310	310	270	270	230	250	250	230	300	310	300	300	300	300	310	290	290	c	c	230	240	260	280	300
6	300	300	b	290	270	260	230	230	300	300	300	320	310	310	300	330	290	b	330	c	b	b	b	b
7	b	b	b	300	b	270	250	240	500	400	400	400	360	380	340	320	300	300	270	c	c	c	c	c
8	c	c	c	c	c	c	c	c	c	c	c	c	c	b	g	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	270	b	300	b	400	c	b	b	b	b
11	b	b	b	350	b	b	b	b	400	450	380	b	b	b	b	300	300	330	360	c	b	b	b	b
12	b	b	b	b	350	b	c	c	c	c	600	400	500	400	340	330	350	360	290	c	b	b	b	b
13	b	b	b	b	b	370	300	b	250	500	450	450	400	380	360	380	410	310	270	310	c	c	b	350
14	b	b	b	b	b	c	c	c	c	c	c	c	b	360	400	b	b	b	220	c	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	420	300	310	c	360	310	300	320	400	c	c	350	b	b
16	300	350	400	400	b	b	250	240	220	220	210	300	300	300	310	280	280	260	300	c	320	b	b	b
17	400	b	350	300	260	270	260	250	220	330	320	330	300	300	300	310	280	350	310	300	b	b	b	280
18	360	b	b	b	b	b	b	270	260	330	300	c	c	c	c	c	c	290	290	c	b	b	b	b
19	b	b	350	350	300	320	220	270	290	320	320	300	b	310	300	290	260	270	350	c	300	310	370	350
20	340	350	350	350	350	330	270	250	300	300	280	300	310	300	300	280	270	280	260	c	260	300	b	b
21	b	b	350	310	300	300	270	260	270	260	260	280	280	280	270	270	250	290	280	270	300	290	310	350
22	320	320	350	350	330	300	270	240	220	250	280	260	310	300	290	310	280	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	300	270	280	c	b	b	b	b
24	b	b	b	b	b	b	b	360	b	250	400	400	b	330	330	340	290	330	280	c	300	b	b	b
25	b	b	b	b	b	b	b	b	260	b	420	400	400	380	b	b	b	300	300	c	b	b	b	b
26	b	b	390	b	b	b	b	b	270	250	250	280	260	280	270	260	260	250	260	[260]	c	250	270	270
27	b	b	b	b	b	400	370	330	320	b	300	310	340	310	310	310	c	c	c	c	c	c	380	b
28	b	b	b	b	b	b	b	250	240	300	270	290	290	300	280	270	280	250	260	c	260	300	290	350
29	350	300	320	320	320	280	230	270	290	270	280	270	270	280	280	300	300	350	360	c	260	b	250	b
30	b	b	b	c	b	b	380	b	280	260	b	550	500	b	500	400	320	300	300	c	280	350	b	b
31	300	350	300	320	300	300	250	250	270	280	290	280	290	280	270	270	260	270	270	c	260	310	300	300
Median	315	(335)	350	320	300	280	250	250	275	300	300	300	310	310	305	305	290	290	280	(270)	260	300	285	300
No	10	8	12	15	13	15	17	18	22	21	25	24	22	23	26	24	24	22	25	5	12	11	10	10

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

Time used: 157.5°E.M.T.

MACQUARIE ISLAND hpF2, MARCH 1951

HOURLY VALUES OF h'F1 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Day \ Hour	07	08	09	10	11	12	13	14	15	16	17
1	q	220	220	210	200	200	200	200	250	240	q
2	220	200	200	200	200	190	200	200	210	230	q
3	q	210	200	210	200	210	200	200	c	c	c
4	c	c	c	200	200	200	200	200	200	200	180
5	q	200	210	200	200	200	200	200	210	180	c
6	q	200	200	200	210	200	200	220	210	b	b
7	q	220	200	200	210	200	200	210	200	q	q
8	c	c	c	c	c	c	b	220	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	b	b	b	b
11	b	b	230	200	b	b	b	b	200	250	260
12	c	c	c	210	200	200	230	220	220	220	270
13	b	q	240	230	230	210	220	200	220	210	260
14	c	c	c	c	c	b	250	230	b	b	b
15	b	b	b	250	250	240	c	300	210	240	300
16	q	q	q	a	200	180	190	200	220	220	q
17	q	q	q	200	210	200	210	200	200	230	q
18	q	q	210	200	c	c	c	c	c	c	b
19	q	230	220	200	210	b	230	210	220	b	q
20	q	210	210	200	200	190	200	200	220	220	q
21	q	q	220	200	200	190	210	200	200	q	q
22	q	q	210	200	210	200	210	200	210	q	c
23	c	c	c	c	c	c	c	c	240	250	q
24	b	b	b	230	220	b	220	210	230	250	b
25	b	b	b	250	220	230	230	b	b	b	q
26	b	q	q	q	220	210	b	b	220	210	b
27	b	b	b	b	220	240	210	210	210	c	c
28	q	q	210	220	210	210	210	210	240	q	q
29	q	q	220	210	210	200	210	210	220	q	q
30	b	b	b	b	250	240	240	230	250	q	b
31	q	q	q	q	200	210	210	200	q	q	q
Median	*	210	210	200	210	200	210	205	220	225	260
No		8	15	21	24	22	23	24	23	14	5

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND h'F1, MARCH 1951

HOURLY VALUES OF h'E OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17	18
1	100	120	110	a	110	110	110	b	110	100	110	110	150
2	100	100	100	110	110	110	100	100	100	100	100	110	100
3	a	a	100	100	a	100	100	100	100	c	c	c	c
4	c	c	c	c	110	100	110	100	100	100	100	100	150
5	100	100	100	100	100	100	100	100	100	100	100	c	c
6	110	100	100	100	100	100	100	100	100	100	100	1b	b
7	100	100	100	100	110	100	100	b	120	120	110	110	a
8	c	c	c	c	c	c	c	b	100	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	b	b	b	b	b
11	b	b	b	b	b	b	b	b	b	b	b	b	b
12	c	c	c	c	110	100	b	110	b	b	b	b	b
13	b	b	b	b	100	100	b	b	b	100	b	b	b
14	c	c	c	c	c	c	b	b	100	b	b	b	100
15	b	b	b	b	b	b	b	c	120	110	120	120	b
16	b	100	100	100	a	a	100	100	100	100	100	100	130
17	b	120	100	110	110	a	a	a	110	110	110	110	b
18	a	b	110	110	110	c	c	c	c	c	c	b	b
19	b	120	120	110	110	110	b	b	110	b	b	120	140
20	120	120	110	110	110	110	110	110	110	110	110	110	a
21	e	120	120	120	120	110	110	110	110	110	110	120	150
22	e	120	110	110	110	110	110	110	110	100	120	c	c
23	c	c	c	c	c	c	c	c	c	b	120	110	a
24	b	b	b	b	b	110	b	120	110	b	a	b	130
25	b	b	b	b	b	b	110	110	b	b	b	a	120
26	b	b	a	110	110	110	110	b	b	b	100	b	b
27	b	b	b	b	b	b	b	b	b	a	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c
29	e	110	120	120	110	110	110	110	110	110	110	a	a
30	b	b	110	b	b	b	110	b	b	b	b	130	a
31	e	120	120	120	120	a	a	110	110	110	110	120	e
Median	115	120	110	110	110	110	110	110	110	100	110	110	135
No	10	13	16	15	17	16	15	14	19	15	16	13	10

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF h'Es OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

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	130	130	100	110	100	100	g	130	g	120	120	g	g	b	g	100	g	140	g	c	110	110	100	b
2	100	100	100	100	100	100	100	100	g	110	100	g	100	100	g	110	g	110	g	c	e	e	100	100
3	100	b	120	110	100	100	100	100	100	g	100	g	g	g	g	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	c	g	g	g	g	g	g	g	g	c	100	e	e	100
5	100	100	100	b	e	e	g	g	g	100	100	g	g	g	100	g	g	c	c	e	e	e	100	e
6	100	100	100	100	e	e	g	g	g	g	g	g	g	g	g	g	g	b	b	c	110	110	b	100
7	110	100	110	110	110	b	100	g	100	110	g	120	110	b	g	g	110	120	100	c	c	c	c	c
8	c	c	c	c	c	c	c	c	c	c	c	c	c	b	g	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	110	e	110	110	c	110	b	100	100
11	b	b	140	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	110	c	b	100	b	b
12	b	b	100	b	100	b	c	c	c	c	g	g	110	g	b	b	b	b	120	c	b	b	b	100
13	100	b	b	b	100	100	110	b	b	b	110	g	b	b	b	g	b	b	120	110	c	c	b	100
14	100	b	b	b	b	c	c	c	c	c	c	c	b	b	g	b	100	110	110	c	100	100	100	b
15	b	100	120	b	100	b	b	b	b	b	b	b	b	c	g	g	g	g	120	c	c	120	120	120
16	110	100	e	e	100	b	110	110	100	110	100	100	100	g	g	g	g	110	g	c	110	100	b	100
17	100	100	120	150	e	e	g	g	g	110	110	110	100	110	110	g	g	g	130	120	120	100	110	120
18	110	110	100	100	100	110	100	g	g	g	g	c	c	c	c	c	c	e	120	c	110	100	110	120
19	100	110	110	110	e	e	g	g	g	110	110	g	b	b	g	b	b	g	g	c	150	110	110	110
20	140	140	130	130	e	e	g	g	g	g	g	g	120	g	g	110	g	g	100	c	e	e	110	120
21	110	110	100	110	110	120	150	150	g	g	110	g	g	g	g	g	g	g	g	c	120	150	120	120
22	110	110	100	100	e	e	g	g	g	g	g	g	g	g	g	g	g	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	g	110	110	c	100	100	b	b
24	b	b	100	b	b	b	100	b	b	b	b	g	b	g	g	b	150	g	150	c	110	120	100	b
25	100	100	b	b	120	b	b	b	b	b	b	b	g	g	b	b	b	150	g	c	110	b	100	100
26	100	100	100	100	100	b	b	b	110	g	g	g	g	b	b	b	g	b	b	b	c	b	b	110
27	100	b	100	b	110	110	110	g	b	b	b	b	b	b	b	110	c	c	c	c	c	c	120	100
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
29	120	120	120	e	e	e	g	g	g	120	g	g	g	110	g	g	g	110	100	c	130	110	b	b
30	b	b	110	c	110	100	b	b	g	b	b	b	g	b	b	b	b	g	130	c	120	120	110	110
31	100	150	130	e	e	e	g	g	g	100	120	120	110	110	g	g	g	g	150	c	120	110	120	150
Median	100	100	100	110	100	100	100	110	*	110	110	*	110	*	*	110	*	110	120	*	110	110	110	105
No.	20	17	21	12	14	8	9	5		9	10		7			5		9	15		16	15	16	18

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND h'Es, MARCH 1951

HOURLY VALUES OF (M 3000) F2 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

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	b	2..f	2.3f	2.6f	3.0f	3.2f	3.3f	3.1f	2.8f	3.0	3.2	3.0	3.0	3.1	3.2	3.0	f	f	c	b	b	b	b
2	b	f	b	3.1	3.0f	3.3f	3.5f	3.2	3.2	3.2	3.3	3.3	3.1	3.1	3.3	3.3	3.3	3.2	3.1	c	3.1	3.2	3.0f	3.4f
3	3.0f	b	2.8	3.0f	2.7f	3.0	3.3	3.4	3.2	3.3	3.3	3.1	3.2	3.0	3.3	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	3.0	3.1	3.1	3.2	3.1	3.2	3.0	3.1	3.5	c	3.5	3.3	3.0	3.0
5	3.0f	(3.0)f	3.0f	3.0f	3.1f	3.0f	3.5f	3.2f	3.1	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	c	c	3.3	3.3	3.3	2.9	3.0f
6	3.0f	3.0f	b	3.3	2.9	3.2f	3.1f	3.3f	3.3	3.1	3.3	3.2	3.3	3.1	3.3	3.3	3.0	b	3.0f	c	b	b	b	b
7	b	b	b	2.9f	b	3.0f	3.1f	3.1	(2.7)	(2.8)f	2.9f	2.9	2.9	3.1	2.8	3.1	3.2	3.2	3.3	c	c	c	c	c
8	c	c	c	c	c	c	c	c	c	c	c	c	c	b	c	c	c	c	c	c	c	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	3.2f	b	3.0f	c	b	b	b	b
11	b	b	b	3.0f	b	b	b	b	3.0	2.8	3.0	b	b	b	b	3.3	3.2f	3.0f	3.1f	c	b	b	b	b
12	b	b	b	b	3.1f	b	c	c	c	c	2.5	2.8	2.8	2.9	3.0	3.1f	3.0f	3.2f	3.1f	c	b	b	b	b
13	b	b	b	b	b	3.1f	3.1f	b	3.5	2.5	3.0	2.9	3.0	3.0	3.0	3.1	2.8	3.0	3.0f	[3.1]	c	c	b	3.3f
14	b	b	b	b	b	c	c	c	c	c	c	c	b	3.3	3.0f	b	b	b	3.0	c	b	b	b	b
15	b	b	b	b	b	b	b	b	b	b	3.0	3.5	3.1	c	3.0f	3.0f	3.1f	3.0f	2.8f	c	c	2.5f	b	b
16	3.3f	3.0f	2.6f	2.6f	b	b	3.1f	3.4f	3.0f	3.2f	3.0f	3.3	3.2	3.2	3.2	3.1	3.1	3.0	3.0	c	f	b	b	b
17	(2.7)f	b	2.7f	3.0f	3.0f	3.0f	3.1	3.3	3.0	3.0	3.2	3.1	3.3	3.3	3.2	3.1	3.2	3.2	3.0	3.1f	b	b	b	3.1f
18	2.8f	b	b	b	b	b	b	3.3	3.5	3.2	3.3	c	c	c	c	c	c	3.1	3.0	c	b	b	b	b
19	b	b	2.9f	2.7f	3.0f	2.8f	3.1	3.1	3.1	3.2	3.1	3.5	b	3.3	3.1f	3.4	3.4	3.1	2.8f	c	3.0f	3.0f	3.0f	2.9f
20	2.9f	2.5f	3.0f	3.0f	2.8f	2.9f	3.2	3.5	3.3	3.2	3.5	3.1	3.2	3.3	3.3	3.3	3.4	3.3	3.3	c	3.4	3.0	b	b
21	b	b	2.9f	3.0f	3.0f	3.0f	3.3f	3.3f	3.4	3.4	3.4	3.1	3.3	3.2	3.3	3.2	3.4	3.2	3.1	[3.5]f	3.1f	3.1f	3.2f	3.0f
22	3.1f	3.0	3.1f	3.1f	3.0f	3.1f	3.1f	3.5f	3.5f	3.2	3.4	3.3f	3.1	3.2f	3.1f	3.1f	3.2	c	c	c	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.8	3.1f	3.0f	c	b	b	b	b
24	b	b	b	b	b	b	b	3.0	b	3.0	2.8	2.8	b	3.0	3.1	2.8	3.1	2.9	3.0	c	3.0f	b	b	b
25	b	b	b	b	b	b	b	b	b	b	2.8	2.9	3.0	3.0	b	b	b	3.0	3.0	c	b	b	b	b
26	b	b	2.8	b	b	b	b	b	2.8f	3.4	3.3	3.3	3.2	3.1	3.2	3.1	3.1	3.4	3.2	[3.4]	c	3.1	3.0f	3.2f
27	b	b	b	b	2.8f	2.8f	2.7f	3.0f	3.0f	b	3.1	3.1	3.2	3.1	3.1	3.0	c	c	c	c	c	c	2.9f	b
28	b	b	b	b	b	b	b	3.0f	3.4	3.5	3.5	3.3	3.2	3.4	3.5	3.5	3.3	3.3f	3.3f	c	3.0f	3.1f	3.0f	3.0f
29	3.0f	3.0f	2.9f	2.7f	2.8f	2.9f	3.3f	3.2f	3.2	3.3	c	3.4	3.4	3.3	3.3	3.1	3.0	2.9	3.0f	c	3.5	b	3.5	b
30	b	b	b	c	b	b	f	b	f	3.5	b	c	c	b	c	c	3.1	3.0	2.9	c	f	2.6f	b	b
31	f	2.7f	3.0f	2.8f	3.0f	2.9f	3.1f	3.3	3.3	(3.1)	3.4	3.4	3.3	3.2	3.4	3.5	3.2	3.3	3.1	c	3.5f	f	3.0f	2.9f
Median	3.0f	3.0f	2.9f	3.0f	3.0f	3.0f	3.1f	3.3f	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	(3.3)	3.2f	3.1f	3.0f	3.0f
No	9	7	12	15	14	15	16	18	20	21	24	23	21	23	23	22	24	21	24	5	10	10	10	10

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

Time used: 157.5°E.M.T.

HOURLY VALUES OF (M 3000)F1 OBSERVED DURING MARCH 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1	q	3.5	3.5	3.8	3.9	3.8	3.8	3.8	3.5	3.5	q
2	3.6	3.6	3.8	3.4	3.7	3.9	3.9	3.8	3.8	1	q
3	q	3.8	3.8	3.8	3.8	3.7	3.6	3.7	c	c	c
4	c	c	c	3.6	3.6	3.6	3.7	3.7	3.7	3.6	1
5	q	3.6	3.6	3.6	3.7	3.8	3.8	3.6	3.7	1	c
6	q	3.7	3.7	3.7	3.7	3.9	3.6	3.8	3.7	b	b
7	q	3.5	3.6f	3.6f	3.9	3.7	3.8	3.7	3.5	q	q
8	c	c	c	c	c	c	b	1	c	c	c
9	c	c	c	c	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	b	b	b	b
11	b	b	3.5	3.6	b	b	b	b	3.6	3.9f	3.6f
12	c	c	c	3.5	3.8	3.9	3.7	3.7	3.6	3.4	3.4
13	b	q	3.5	3.5	3.6	3.7	3.7	3.8	3.6	3.5	3.5
14	c	c	c	c	c	b	3.6	3.6	b	b	b
15	b	b	b	3.6	3.6	3.6	c	3.2f	3.2f	3.6f	3.5f
16	q	q	q	a	3.8	3.6	3.6	3.6	3.8	1	q
17	q	q	q	3.7	3.5	3.8	3.8	3.8	3.7	1	q
18	q	q	3.6	3.6	c	c	c	c	c	c	b
19	q	3.9	3.6	3.5	3.7	b	3.7	3.7	3.8	b	q
20	q	4.0	3.8	3.7	3.7	3.5	3.6	3.6	3.8	3.8	q
21	q	q	3.8	3.7	3.8	3.7	3.7	3.9	4.0	q	q
22	q	q	3.9	3.8	3.8f	3.7	3.6	3.6	3.7	q	c
23	c	c	c	c	c	c	c	c	1	3.5	q
24	b	b	b	3.5	3.5	b	3.5	3.5	3.5	3.7	b
25	b	b	b	3.3	3.2	3.5	3.6	b	b	b	q
26	b	q	q	q	1	3.6	b	b	1	1	b
27	b	b	b	b	3.3	3.5	3.6	3.6	3.5	c	c
28	q	q	1	3.5	3.6	1	1	1	1	q	q
29	q	q	1	1	1	1	1	1	1	q	q
30	b	b	b	b	1	1	1	1	1	q	b
31	q	q	q	q	1	1	1	1	q	q	q
Median	*	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.6	*
No.		8	13	20	20	18	19	19	18	9	

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND (M 3000)F1, MARCH 1951

HOURLY VALUES OF f°F2 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	c	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	c	c	c	c	c
3	b	b	b	b	b	b	3.4f	b	b	b	b	3.8
4	b	b	b	b	b	b	b	b	b	b	b	b
5	b	b	b	b	b	3.0f	2.7f	3.4	3.8	3.9	4.3	4.6
6	b	b	b	b	b	b	b	b	b	b	b	b
7	c	c	c	c	c	c	c	c	c	c	c	c
8	b	b	b	b	b	b	b	b	4.2	5.0	b	6.5
9	3.1f	b	b	b	b	b	b	c	c	c	c	c
10	b	3.0f	b	b	b	b	b	b	3.6	4.0	4.5	4.9
11	c	c	c	c	c	c	c	c	c	5.0	b	6.3
12	b	b	b	3.6	5.5	6.0	7.0	8.0	8.5	c	c	c
13	c	c	c	c	c	c	c	c	c	c	c	8.0
14	b	3.7f	b	b	b	b	3.0f	4.0f	4.5	5.0	5.0	5.5
15	b	3.6f	3.6f	b	3.5f	b	b	4.5	5.4	6.0	6.2	7.0
16	c	c	c	c	c	c	c	c	c	6.5	7.0	7.1
17	3.5f	4.5f	4.3f	3.9f	3.7f	3.4f	3.9	c	c	c	c	c
18	b	b	4.4f	3.8f	3.9f	3.5f	2.9f	5.6	6.5	7.1	8.5	9.0
19	(4.0)f	b	b	b	b	b	b	b	b	4.4	5.9fh	5.2
20	3.9f	3.4f	3.2f	3.3f	3.0f	b	2.6f	4.3f	5.4f	6.0f	6.6f	7.4
21	b	b	b	b	b	b	b	3.5f	b	b	b	5.6
22	b	b	b	b	b	b	2.0f	3.5f	4.5	5.5	7.1	b
23	b	b	b	b	b	b	b	b	4.0	5.0	b	b
24	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
26	c	c	c	c	c	c	c	c	c	c	c	c
27	b	b	2.0f	2.0f	2.3f	2.1f	1.9f	4.5	6.1	7.1	8.0	8.1
28	b	b	5.0f	b	5.3f	5.4f	3.7f	4.5	6.2	7.0	7.3	9.0
29	4.5f	4.3f	4.5f	4.5f	3.9f	3.5f	2.5f	4.0	5.5	6.9	8.0	8.1
30	3.8f	4.0f	b	b	3.9f	3.9f	3.5f	4.6	6.0	7.0	8.5	c
Median	(3.8f)	(3.7f)	(4.3f)	(3.7f)	(3.9f)	(3.5f)	3.0f	4.4f	5.4	5.8	7.0	6.8
No	6	7	7	6	9	8	12	12	14	16	13	16

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND f°F2, APRIL 1951

HOURLY VALUES OF f°F2 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	c	c	c	c	c	c	c	c	c	c	c	c
2	c	7.3	7.4	7.5	8.2	6.5f	4.5f	c	b	b	b	b
3	3.8	b	4.5	b	4.6f	b	b	c	b	b	b	b
4	b	b	4.6f	4.5f	4.4f	6.0f	b	c	b	b	b	b
5	b	4.6	5.0f	c	b	b	b	c	b	b	b	b
6	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	4.5	4.2f	4.0f	c	3.7f	3.5f	b	b
8	3.1f	c	c	c	c	c	c	c	c	c	c	c
9	c	c	c	c	5.5	5.0f	b	c	b	b	b	b
10	5.0	5.3	6.5f	6.4f	5.4f	c	c	c	c	c	c	c
11	b	6.5	6.5	4.4f	b	b	b	b	b	b	b	b
12	c	c	c	c	c	c	c	c	c	c	c	c
13	9.0	9.0	8.5f	8.0	8.8f	7.0f	6.0f	4.4f	b	5.2f	3.3f	b
14	5.5	5.8	6.0f	6.0	5.8	5.7	5.0f	4.2f	b	b	b	b
15	7.0	6.7	7.0	7.0	7.4	7.4	[7.1]	5.4f	4.5f	4.5f	c	c
16	7.1	7.4	7.2	7.4	7.4	7.6	c	7.5	4.8	4.5	3.5f	3.5f
17	9.0	8.6	8.5	8.6	8.1	8.6	7.0f	c	5.0f	b	b	b
18	10.0	9.5	9.8	9.6	9.3	9.0	8.0	c	b	b	b	b
19	b	5.5	5.6	5.6	5.6f	5.6f	4.0f	c	b	b	b	4.5f
20	8.6f	8.1f	8.0f	7.5f	6.3f	6.5	5.0f	4.1	b	b	b	b
21	b	b	c	c	c	c	c	c	c	c	b	b
22	9.5	9.0	5.6	5.8	5.0f	5.5f	b	c	b	b	b	b
23	b	5.8	7.0	5.0f	c	c	c	c	c	c	c	c
24	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
26	c	c	c	c	c	b	b	c	b	b	b	b
27	8.5	8.5	8.5	8.4	8.3	7.5	[6.3]	c	4.3f	4.3f	3.8f	5.0f
28	9.5	9.5	9.5	9.5	7.5	8.0f	c	c	4.1	4.9f	4.7f	4.5f
29	8.1	9.0	9.5	9.1	9.1	7.6	c	b	(5.0)f	b	b	b
30	c	c	c	c	c	c	c	c	c	c	c	c
Median	8.3	7.4	7.0	7.4	6.8	6.8	5.5	(4.4)f	(4.5)f	(4.5)f	*	*
No	14	17	19	17	18	16	10	5	7	6		

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5°E.M.T. MACQUARIE ISLAND f°F2, APRIL 1951

HOURLY VALUES OF f°F1 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16
1	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	4.0	4.0	1	q
3	b	b	b	b	b	b	b	b	3.9	b	b
4	b	b	b	b	b	b	b	b	3.8f	3.9f	3.5f
5	b	b	b	b	3.8	3.8	b	3.8	3.8	c	b
6	b	b	b	b	b	b	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	q
8	b	b	3.7	3.9	b	4.0	b	c	c	c	c
9	b	c	c	c	c	c	c	c	c	c	q
10	b	b	b	b	3.9	4.0	4.0	4.0	4.0f	3.6f	q
11	c	c	c	3.1	b	4.2	b	4.1	1	q	b
12	q	b	b	c	c	c	c	c	c	c	c
13	c	c	c	c	c	1	1	1	q	q	q
14	q	q	q	q	4.0	b	4.5	4.2	4.0	q	q
15	b	q	q	4.0	4.0	4.3	4.0	4.0	1	q	q
16	c	c	c	q	1	1	3.9	3.9	q	q	q
17	q	c	c	c	c	c	b	b	b	q	q
18		q	q	q	q	q	1	q	q	q	q
19	b	b	b	q	q	3.9	b	4.4	4.0	b	q
20	q	q	q	q	4.2	4.2	1	q	q	q	q
21	b	b	b	b	b	b	b	b	c	c	c
22	q	q	q	q	3.8	b	b	1	b	q	q
23	b	b	b	b	b	b	b	4.0	b	1	c
24	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c
27	q	q	q	q	1	q	q	q	q	q	q
28	q	q	q	q	q	1	1	1	q	q	q
29	q	q	q	q	q	q	q	1	q	q	q
30	q	q	q	q	q	c	c	c	c	c	c
Median			*	*	4.0	4.0	*	4.0	4.0	*	*
No					6	7		9	7		

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF $f^{o}E$ OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	2.7	b	b	b	a
3	b	b	b	b	b	b	b	b	b	b	a
4	b	b	b	b	b	b	b	b	b	a	a
5	b	b	b	b	b	b	b	b	c	a	a
6	b	b	b	b	b	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	2.1	2.0
8	a	b	2.8	b	c	b	c	c	c	c	c
9	c	c	c	c	c	c	c	c	b	b	a
10	b	b	b	b	2.9	3.0	b	b	b	b	c
11	c	c	2.2	b	b	b	b	b	a	a	a
12	b	b	c	c	c	c	c	c	c	c	c
13	c	c	c	c	2.9	b	2.9	2.8	a	a	a
14	a	2.4	2.6	b	b	b	2.9	2.8	2.6	2.2	2.2
15	2.6	2.4	2.7	3.0	3.0	3.0	2.8	2.7	2.1	1.8	e
16	c	c	2.8	2.8	2.8	3.0	3.0	2.8	2.4	2.0	e
17	c	c	c	c	c	b	b	b	b	b	b
18	1.8	2.2	2.6	3.0	3.0	3.0	3.0	2.8	2.7	2.1	e
19	b	b	b	3.1	3.1	b	b	b	b	a	a
20	2.0	2.1	2.6	b	b	3.1	b	3.0	2.8	b	a
21	b	b	b	b	b	b	b	c	c	c	c
22	1.9	2.2	b	2.8	b	b	3.0	b	a	1.8	e
23	b	b	b	b	b	b	b	b	b	c	c
24	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	3.5
27	e	2.0	2.4	3.0	2.8	3.1	2.6	2.6	2.0	a	e
28	a	2.4	2.5	3.0	2.7	2.7	2.8	b	b	b	a
29	1.7	2.0	2.4	2.6	2.6	2.7	2.7	2.5	2.2	e	e
30	a	2.0	2.5	2.8	c	c	c	c	c	c	c
Median	1.8	2.2	2.6	3.0	2.9	3.0	2.8	2.8	2.4	2.0	e
No	6	9	11	9	9	8	10	8	7	7	9

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

Time used: 57.5° E.M.T.

MACQUARIE ISLAND $f^{o}E$, APRIL 1951

HOURLY VALUES OF f Es OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	c	c	c	c	c	c	g	b	b	b	3.6	3.5	c	6.0	5.5	4.0	b
3	b	b	b	3.5	3.6	4.3	b	b	b	b	b	b	b	b	b	4.0	b	3.7	4.5	c	5.0	4.5	5.0	b
4	4.6	4.6	4.3	3.5	3.6	3.8	b	b	b	b	b	b	b	b	b	b	3.6	4.0	7.0	c	b	b	b	b
5	b	b	b	b	b	3.5	b	b	b	b	b	b	b	b	3.5	c	4.0	7.0	5.5	c	6.0	b	b	b
6	b	b	b	3.2	3.6	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.5	3.5	3.0	c	3.8	3.6	4.6	b
8	b	3.6	3.5	b	b	b	b	3.5	b	g	b	c	3.6	c	c	c	c	c	c	c	c	c	c	c
9	3.6	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	g	3.5	5.0	c	5.5	4.4	b	3.8
10	3.6	3.6	3.6	b	3.4	b	b	b	b	b	b	g	g	b	b	b	b	c	c	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	g	b	b	b	b	b	4.7	4.2	4.6	3.6	4.2	5.0	4.5	b	3.5
12	3.0	2.4	3.0	e	2.0	e	e	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
13	c	c	c	c	c	c	c	c	c	c	c	g	g	g	g	3.4	4.5	4.4	3.6	5.0	5.0	5.0	8.0	5.7
14	4.4	7.5	5.6	5.5	b	b	3.5	2.0	g	3.5	b	b	b	b	b	2.9	2.9	2.8	2.2	2.2	5.0	4.3	3.6	7.0
15	4.5	3.7	3.2	3.8	2.8	b	3.6	3.5	3.6	4.0	3.2	3.3	g	g	g	g	g	g	e	e	2.0	2.0	c	c
16	c	c	c	c	c	c	c	c	c	3.5	g	g	g	g	g	4.6	4.0	g	c	e	e	e	e	e
17	4.4	3.5	2.0	e	3.4	3.3	2.0	c	c	c	c	c	b	b	b	b	b	b	e	c	4.0	4.5	4.0	4.7
18	5.5	5.0	4.4	4.0	3.5	2.0	2.0	3.6	2.2	g	g	g	g	g	g	g	g	g	4.0	c	9.0	5.9	6.0	5.5
19	3.8	4.3	b	b	b	b	b	b	b	g	g	g	b	b	b	b	3.5	4.0	2.0	c	3.3	4.5	10.0	4.3
20	2.0	3.8	e	e	4.5	3.6	2.4	g	g	g	b	b	g	b	g	g	4.0	4.4	4.5	4.4	9.0	5.5	7.5	4.6
21	4.5	4.3	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	b
22	b	b	5.0	5.5	b	b	2.0	g	b	b	g	b	b	g	b	3.8	g	3.6	6.6	c	6.0	8.0	b	b
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	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	4.5	6.0	c	9.0	7.2	5.5	5.5
27	3.6	3.6	g	g	g	g	g	2.0	2.5	2.7	g	g	g	g	g	g	2.0	g	(2.3)	c	3.6	4.0	3.6	4.0
28	5.7	4.6	6.5	6.6	4.4	3.6	3.7	2.8	g	g	g	g	g	g	b	b	b	2.0	c	c	4.5	3.7	6.0	6.0
29	3.6	2.0	2.0	3.3	3.6	2.0	e	g	g	g	g	3.5	g	g	g	g	g	g	c	4.6	4.5	4.5	9.0	5.5
30	3.6	5.6	b	4.0	e	e	e	2.7	g	g	g	c	c	c	c	c	c	c	c	c	c	c	c	c
Median	3.8	3.8	3.5	3.5	3.5	3.3	2.0	2.4	**	**	**	**	**	**	**	2.9	3.5	3.6	3.6	4.2	5.0	4.5	5.2	4.7
No	15	15	13	14	13	11	11	10	8	12	9	9	10	9	8	11	15	19	17	7	19	18	14	13

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

HOURLY VALUES OF h'F2 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	c	c	c	c	c	c	270	270	290	230	280	280	c	b	b	b	b
3	b	b	b	b	b	b	330	b	b	b	b	250	240	b	360	b	450	b	b	c	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	b	b	b	b	450	370	440	250	b	c	b	b	b	b
5	b	b	b	b	b	350	350	300	250	250	550	450	b	450	450	c	b	b	b	c	b	b	b	b
6	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	300	250	270	c	350	260	b	b
8	b	b	b	b	b	b	b	b	390	340	b	300	350	c	c	c	c	c	c	c	c	c	c	c
9	370	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	260	360	b	c	b	b	b	b
10	b	400	b	b	b	b	b	b	300	250	380	360	380	370	350	300	250	c	c	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	270	b	280	b	290	270	300	b	b	b	b	b	b	b	b
12	b	b	b	250	240	220	260	260	250	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
13	c	c	c	c	c	c	c	c	c	c	c	260	270	250	250	250	200	250	250	350	b	300	400	b
14	b	450	b	b	b	b	380	270	240	250	340	450	340	350	330	250	270	260	310	310	b	b	b	b
15	b	350	400	b	310	b	b	250	260	270	260	260	260	260	260	250	240	240	240	260	290	300	c	c
16	c	c	c	c	c	c	c	c	c	250	270	260	260	250	240	230	230	220	c	240	240	250	280	300
17	350	300	280	260	260	260	250	c	c	c	c	c	250	250	250	240	220	250	260	c	300	b	b	b
18	b	b	350	320	280	270	300	240	230	220	230	210	250	240	230	240	240	220	250	c	b	b	b	b
19	400	b	b	b	b	b	b	b	b	280	250h	450	b	370	350	260	270	280	300	c	b	b	b	310
20	280	360	290	300	330	b	300	250	250	230	310	290	280	250	250	300	300	230	410	350	b	b	b	b
21	b	b	b	b	b	b	b	400	b	b	b	350	b	b	c	c	c	c	c	c	c	c	b	b
22	b	b	b	b	b	b	380	300	270	290	290	b	250	260	270	300	250	250	b	c	b	b	b	b
23	b	b	b	b	b	b	b	b	300	310	b	b	b	350	350	300	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	b	b	c	b	b	b	b
27	b	b	350	360	300	290	300	240	230	220	250	260	220	210	210	230	220	240	230	c	290	270	260	210
28	b	b	350	b	370	260	260	250	240	220	220	250	250	250	230	230	230	220	c	c	330	400	320	310
29	310	290	280	300	280	290	300	250	220	230	230	200	210	240	210	220	210	210	c	b	250	b	b	b
30	310	310	b	b	300	250	250	230	220	220	220	c	c	c	c	c	c	c	c	c	c	c	c	c
Median	(330)	(350)	(350)	(300)	(300)	(265)	300	250	250	250	260	270	255	260	270	250	245	250	265	(310)	(290)	(285)	*	*
No	6	7	7	6	9	8	12	12	14	16	13	16	14	17	19	17	18	16	10	5	7	6		

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND h'F2, APRIL 1951

HOURLY VALUES OF hpF2 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	c	c	c	c	c	c	280	290	300	280	290	290	c	b	b	b	b
3	b	b	b	b	b	b	330	b	b	b	b	250	250	b	360	b	450	b	b	c	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	b	b	b	b	450	370	440	250	b	c	b	b	b	b
5	b	b	b	b	b	350	350	300	300	250	550	450	b	450	450	c	b	b	b	c	b	b	b	b
6	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	300	290	300	c	350	270	b	b
8	b	b	b	b	b	b	b	b	390	340	b	300	350	c	c	c	c	c	c	c	c	c	c	c
9	370	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	270	360	b	c	b	b	b	b
10	b	400	b	b	b	b	b	b	300	250	380	360	380	370	350	300	250	c	c	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	290	b	280	b	290	270	300	b	b	b	b	b	b	b	b
12	b	b	b	270	250	250	270	280	290	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
13	c	c	c	c	c	c	c	c	c	c	c	270	310	300	280	300	280	280	290	350	b	300	400	b
14	b	450	b	b	b	b	380	290	270	310	340	450	340	350	330	330	310	280	330	330	b	b	b	b
15	b	350	400	b	330	b	b	260	270	270	270	260	260	280	290	280	290	280	300	310	310	300	c	c
16	c	c	c	c	c	c	c	c	c	280	290	280	270	270	260	280	250	300	c	280	260	290	330	390
17	350	300	300	300	300	300	270	c	c	c	c	c	290	270	270	260	270	300	300	c	300	b	b	b
18	b	b	350	330	310	300	320	290	240	250	250	280	270	270	270	260	260	270	280	c	b	b	b	b
19	400	b	b	b	b	b	b	b	b	300	500	450	b	370	350	310	300	330	330	c	b	b	b	350
20	290	380	320	360	370	b	330	280	260	280	310	300	290	300	320	340	320	270	420	370	b	b	b	b
21	b	b	b	b	b	b	b	400	b	b	b	350	b	b	c	c	c	c	c	c	c	c	b	b
22	b	b	b	b	b	b	380	300	300	300	300	b	270	300	300	320	260	260	b	c	b	b	b	b
23	b	b	b	b	b	b	b	b	300	310	b	b	b	350	350	310	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	b	b	c	b	b	b	b
27	b	b	350	360	300	290	300	280	250	240	270	280	280	280	290	270	250	270	270	c	300	290	300	220
28	b	b	350	b	370	300	280	270	250	260	280	270	270	270	250	270	280	270	c	c	330	400	340	340
29	320	310	340	310	300	300	300	260	250	250	250	250	270	260	250	260	250	240	c	b	250	b	b	b
30	310	320	b	b	300	290	300	250	240	250	260	c	c	c	c	c	c	c	c	c	c	c	c	c
Median	(335)	(350)	(350)	(320)	(300)	(300)	310	280	270	275	290	280	275	290	290	300	280	280	300	(330)	(300)	(295)	*	*
No	6	7	7	6	9	8	12	12	14	16	13	16	14	17	19	17	18	16	10	5	7	6		

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5°E.M.T. MACQUARIE ISLAND hpF2, APRIL 1951

HOURLY VALUES OF h'F1 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16
1	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	230	230	220	q
3	b	b	b	b	b	b	b	b	240	b	b
4	b	b	b	b	b	b	b	b	250	270	a
5	b	b	b	b	250	230	b	250	250	c	b
6	b	b	b	b	b	b	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	q
8	b	b	250	230	b	c	b	c	c	c	c
9	b	c	c	c	c	c	c	c	c	c	q
10	b	b	b	b	230	260	250	250	250	240	q
11	c	c	c	230	b	220	b	210	220	q	b
12	q	b	b	c	c	c	c	c	c	c	c
13	c	c	c	c	c	240	240	230	q	q	q
14	q	q	q	q	240	b	210	250	220	q	q
15	b	q	q	240	230	220	210	270	250	q	q
16	c	c	c	q	210	230	220	220	q	q	q
17	q	c	c	c	c	c	b	b	b	q	q
18	q	q	q	q	q	q	210	q	q	q	q
19	b	b	b	q	q	260	b	250	250	b	q
20	q	q	q	q	230	230	230	q	q	q	q
21	b	b	b	b	b	b	b	b	c	c	c
22	q	q	q	q	240	b	b	250	b	q	q
23	b	b	b	b	b	b	b	b	b	270	c
24	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c
27	q	q	q	q	230	q	q	q	q	q	q
28	q	q	q	q	q	220	230	230	q	q	q
29	q	q	q	q	q	q	q	210	q	q	q
30	q	q	q	q	q	c	c	c	c	c	c
Median				*	230	230	225	240	250	*	
No					8	9	8	12	9		

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND h'F1, APRIL 1951

HOURLY VALUES OF h'E OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	110	b	b	b	a
3	b	b	b	b	b	b	b	b	b	b	a
4	b	b	b	b	b	b	b	b	b	a	a
5	b	b	b	b	b	b	b	b	c	a	a
6	b	b	b	b	b	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	140	130
8	a	b	120	b	c	b	c	c	c	c	c
9	c	c	c	c	c	c	c	c	b	b	a
10	b	b	b	b	140	120	b	b	b	b	c
11	c	c	120	b	b	b	b	b	a	a	a
12	b	b	c	c	c	c	c	c	c	c	c
13	c	c	c	c	110	b	120	110	a	a	a
14	a	110	120	b	b	b	b	b	120	140	140
15	100	100	110	110	110	110	110	130	130	(170)	e
16	c	c	100	120	120	120	b	130	140	100	e
17	c	c	c	c	c	b	b	b	b	b	b
18	110	110	110	110	120	110	120	120	110	120	e
19	b	b	b	120	120	b	b	b	b	a	a
20	100	120	100	b	b	110	b	150	140	b	a
21	b	b	b	b	b	b	b	c	c	c	c
22	130	b	b	100	b	b	110	b	a	140	e
23	b	b	b	b	b	b	b	b	b	c	c
24	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	120
27	e	b	120	110	110	120	130	110	110	a	e
28	a	110	110	110	110	110	120	b	b	b	a
29	b	110	110	110	110	110	110	110	120	e	e
30	a	100	100	100	c	c	c	c	c	c	c
Median	110	110	110	110	110	110	115	120	120	140	e
No	5	7	11	9	9	8	8	7	7	7	9

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5°E.M.T. MACQUARIE ISLAND h'E, APRIL 1951

HOURLY VALUES OF h'Es OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	c	c	c	c	c	c	g	b	b	b	130	150	c	110	100	110	b
3	b	b	b	110	110	130	b	b	b	b	b	b	b	b	b	120	b	120	110	c	110	110	100	b
4	100	110	100	100	100	100	b	b	b	b	b	b	b	b	b	b	120	140	120	c	b	b	b	b
5	b	b	b	b	b	110	b	b	b	b	b	b	b	b	110	c	110	110	110	c	110	b	b	b
6	b	b	b	100	100	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	150	150	130	c	110	110	110	b
8	b	110	100	b	b	b	b	100	b	g	b	c	100	c	c	c	c	c	c	c	c	c	c	c
9	100	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	g	110	110	c	110	110	b	100
10	110	110	110	b	100	b	b	b	b	b	b	g	g	b	b	b	b	c	c	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	g	b	b	b	b	b	100	110	110	100	100	100	100	b	100
12	100	100	110	e	150	e	e	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
13	c	c	c	c	c	c	c	c	c	c	c	g	g	g	g	120	120	120	130	120	120	130	100	100
14	110	130	110	100	b	b	150	110	g	100	b	b	b	b	b	150	140	130	130	150	110	100	100	100
15	110	100	100	100	100	b	110	110	100	100	110	110	g	g	g	g	g	g	e	e	160	150	c	c
16	c	c	c	c	c	c	c	c	c	100	g	g	g	g	g	100	100	g	c	e	e	e	e	e
17	150	120	140	e	110	100	110	c	c	c	c	c	b	b	b	b	b	b	e	c	130	110	110	100
18	110	110	110	120	150	150	150	120	120	g	g	g	g	g	g	g	g	g	150	c	100	110	100	100
19	100	100	b	b	b	b	b	b	b	g	g	g	b	b	b	b	130	130	150	c	150	125	100	110
20	150	100	e	e	200	110	130	g	g	g	b	b	g	b	g	g	130	110	110	110	100	110	100	100
21	100	100	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	b
22	b	b	110	100	b	b	100	g	b	b	g	b	b	g	b	110	g	120	110	c	110	100	b	b
23	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	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	120	110	c	100	100	100	110
27	110	110	g	g	g	g	g	110	110	110	g	g	g	g	g	g	100	g	130	c	140	130	130	110
28	110	110	110	110	130	110	110	110	g	g	g	g	g	g	b	b	b	120	c	c	110	130	110	110
29	100	150	130	100	100	110	e	g	g	g	g	100	g	g	g	g	g	g	c	110	110	100	100	100
30	100	110	b	100	e	e	e	100	g	g	g	c	c	c	c	c	c	c	c	c	c	c	c	c
Median	110	110	110	100	110	110	110	110	*	*	*	*	*		*	115	120	120	120	110	110	110	100	100
No.	15	15	11	10	11	8	7	7								6	10	14	15	5	18	17	13	12

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

Time used: 157. 5° E.M.T.

MACQUARIE ISLAND h'Es, APRIL 1951

HOURLY VALUES OF (M 3000) F2 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.2	3.2	3.1	3.4f	3.5f	c	b	b	b	b
3	b	b	b	b	b	b	3.0f	b	b	b	b	3.5	3.7	b	3.1	b	2.5f	b	b	c	b	b	b	b
4	b	b	b	b	b	b	b	b	b	b	b	b	b	b	2.8f	3.1f	2.8f	3.0f	b	c	b	b	b	b
5	b	b	b	b	b	3.0f	2.9f	3.1	3.1	3.1	2.5	2.5	b	2.7	3.0f	c	b	b	b	c	b	b	b	b
6	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.1	3.1f	3.0f	c	3.0f	3.2f	b	b
8	b	b	b	b	b	b	b	b	3.0	3.0	b	3.7	2.9f	c	c	c	c	c	c	c	c	c	c	c
9	2.9f	b	b	b	b	b	b	c	c	c	c	c	c	c	c	c	3.3	2.8f	b	c	b	b	b	b
10	f	2.9f	b	b	b	b	b	b	3.2	4.1	3.0	3.0	3.1	3.0	2.7f	3.0f	2.8	c	c	c	c	c	c	c
11	c	c	c	c	c	c	c	3.0	3.3	3.2	b	3.1	b	3.2	3.1	3.0f	b	b	b	b	b	b	b	b
12	b	b	b	3.4	3.2	3.3	3.1	3.1	3.0	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
13	c	c	c	c	c	c	c	c	c	c	c	3.1	3.0	3.0	3.0f	3.0	3.5f	3.2f	3.0f	3.0f	b	2.8	2.8f	b
14	b	2.7f	b	b	b	b	2.9f	3.0f	3.1	3.0	2.8	2.7	2.9	3.0	3.0	3.0	3.1	3.1	3.0f	2.8f	b	b	b	b
15	b	2.7f	2.5f	b	2.7f	b	b	3.3	3.1	3.2	3.2	3.2	3.2	3.1	3.1	3.3	3.1	3.2	[3.0]	2.8f	2.9f	3.0f	c	c
16	c	c	c	c	c	c	c	c	c	3.4	3.3	3.3	3.4	3.3	3.6	3.3	3.5	3.1	c	3.2	3.1	3.0	2.9f	2.8f
17	2.8f	3.0f	3.0f	3.0f	3.0f	3.0f	3.2	c	c	c	c	c	3.0	3.1	3.2	3.1	3.2	3.0	3.0f	c	2.9f	b	b	b
18	b	b	2.9f	2.8f	3.0f	2.8f	2.7f	3.0	c	3.2	3.5	3.3	3.3	3.2	3.3	3.2	3.1	3.3	3.1	b	b	b	b	b
19	f	b	b	b	b	b	b	b	b	3.0	2.7f	2.7	b	2.9	3.1	2.9	3.1	2.8f	3.0f	c	b	b	b	3.0f
20	2.9f	2.9f	2.9f	3.0f	3.0f	b	2.9f	3.1f	3.2f	3.1f	3.1f	3.1	3.0f	2.9f	2.9f	2.9f	3.0f	3.1	2.6f	3.0	b	b	b	b
21	b	b	b	b	b	b	b	3.0f	b	b	b	2.9	b	b	c	c	c	c	c	c	c	c	b	b
22	b	b	b	b	b	b	3.0f	2.8	3.2	3.1	3.0	b	3.4	3.0	3.4	3.2	3.3f	3.0f	b	c	b	b	b	b
23	b	b	b	b	b	b	b	b	3.3	3.3	b	b	b	2.8	2.9	3.4f	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	b	b	c	b	b	b	b
27	b	b	3.0f	3.0f	3.0f	3.0f	2.9f	3.0f	3.5	3.5	3.1	3.1	3.1	3.1	3.1	3.3	3.0	3.1	[3.2]	c	2.8f	3.1	2.8f	3.0f
28	b	b	2.5f	b	2.9f	3.0f	2.8f	3.0	3.3	3.2	3.3	3.1	3.2	3.2	3.3	3.1	3.3	3.1f	c	c	2.9	2.8f	2.7f	2.9f
29	2.9f	2.6f	3.0f	2.7f	2.9	3.1f	3.0f	3.0	3.3	3.6	3.3	3.3	3.1	3.1	3.1	3.2	3.1	3.5	c	b	(2.6)f	b	b	b
30	3.0f	3.0f	b	b	2.9f	3.0f	2.9f	3.3	3.6	3.4	3.2	c	c	c	c	c	c	c	c	c	c	c	c	c
Median	(2.9f)	(2.9f)	(2.9f)	(3.0f)	(3.0f)	(3.0f)	2.9f	3.0	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0f	(3.0f)	(2.9f)	(3.0f)	*	*
No	5	7	7	6	9	8	12	13	14	16	13	16	14	17	19	17	18	16	10	5	7	6		

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

Time used: 157.5° E.M.T.

MACQUARIE ISLAND (M 3000) F2. APRIL 1951

HOURLY VALUES OF (M 3000)F1 OBSERVED DURING APRIL 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16
1	c	c	c	c	c	c	c	c	c	c	c
2	c	c	c	c	c	c	c	1	1	1	q
3	b	b	b	b	b	b	b	b	1	b	b
4	b	b	b	b	b	b	b	b	3.5f	3.1f	3.0f
5	b	b	b	b	3.4	3.6	b	3.5	3.5	c	b
6	b	b	b	b	b	b	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	c	q
8	b	b	3.7	3.5	b	c	b	c	c	c	c
9	b	c	c	c	c	c	c	c	c	c	q
10	b	b	b	b	3.5	3.5	3.5	3.5	3.4	3.6f	q
11	c	c	c	1	b	1	b	1	1	q	b
12	q	b	b	c	c	c	c	c	c	c	c
13	c	c	c	c	c	1	1	1	q	q	q
14	q	q	q	q	1	b	1	3.5	3.5	q	q
15	b	q	q	1	1	1	1	1	1	q	q
16	c	c	c	q	1	1	1	1	q	q	q
17	q	c	c	c	c	c	b	b	b	q	q
18	q	q	q	q	q	q	1	q	q	q	q
19	b	b	b	q	q	3.5	b	3.5	3.4	b	q
20	q	q	q	q	3.6	3.6	1	q	q	q	q
21	b	b	b	b	b	b	b	b	c	c	c
22	q	q	q	q	1	b	b	1	b	q	q
23	b	b	b	b	b	b	b	3.2	b	1	c
24	c	c	c	c	c	c	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c
27	q	q	q	q	1	q	q	q	q	q	q
28	q	q	q	q	q	1	1	1	q	q	q
29	q	q	q	q	q	q	q	1	q	q	q
30	q	q	q	q	q	c	c	c	c	c	c
Median No.			*	*	*	*	*	3.5 5	3.5 5	*	*

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157. 5° E.M.T. MACQUARIE ISLAND (M 3000)F1, APRIL 1951

HOURLY VALUES OF f°F2 OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1												
2												
3												
4												
5					NO RECORD 1st. - 5th.							
6	2.9	2.4f	2.0f	1.8f	1.8	(1.8)	1.7	2.8z	4.3z	4.7z	5.4	6.7
7	f	3.1f	3.2f	3.0f	2.8f	2.9f	2.3f	3.4f	5.1	5.7	c	c
8												
9												
10												
11												
12												
13												
14												
15					NO RECORD 8th. - 25th.							
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26	3.1	2.7	3.0	3.0	3.2	(3.0)f	2.4f	2.3f	4.4	5.6z	6.5	7.8
27	a	a	a	b	b	4.5	b	b	4.3	4.5	5.4	(6.9)
28	3.3	2.5	2.3	2.2	2.5f	2.6	2.1	2.1	3.5z	5.0	5.9	6.6
29	f	c	c	1.6	1.6	a	a	(2.0)f	3.9	5.2	5.6	6.5
30	a	a	a	4.1f	3.4f	3.0f	(2.3)f	(1.8)f	3.8	4.8z	5.3	5.5z
31	a	a	3.8	3.5f	3.4f	2.9f	2.5f	2.3	3.7	4.7z	4.9z	5.7
Median	*	*	(3.0)	(3.0)f	(2.8)f	(2.9)f	(2.3)f	(2.3)f	(4.1)	(4.9)	(5.4)	(6.6)
No.			5	7	7	7	6	7	8	8	7	7

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

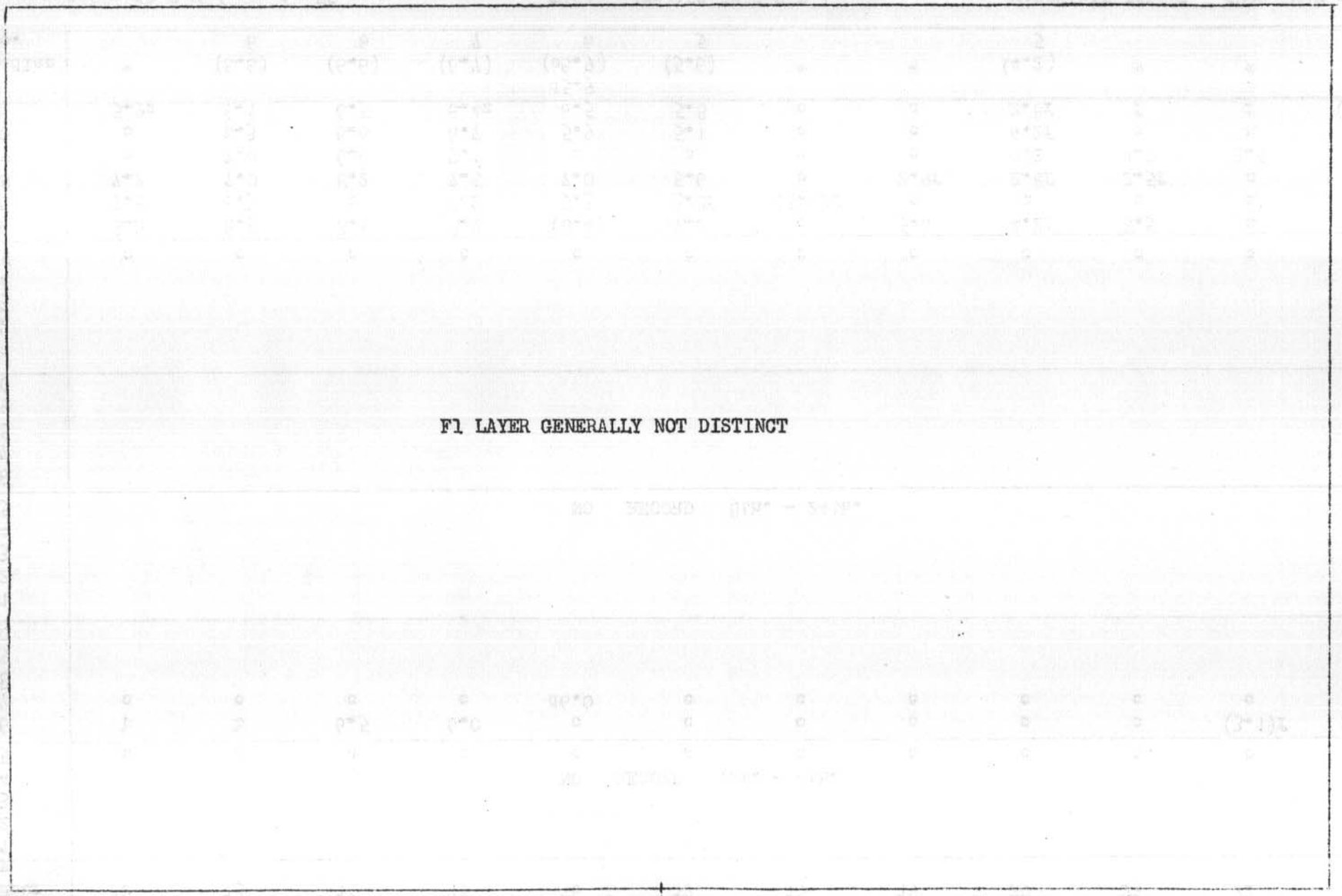
Time used: 157.5° E.M.T.

HOURLY VALUES OF f°F2 OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1												
2												
3												
4					NO RECORD 1st. - 4th.							
5	c	c	c	c	c	c	c	c	c	c	b	b
6	b	b	6.5	6.0	c	c	c	c	c	c	(3.1)f	2.7f
7	c	c	c	c	d6.0	c	c	c	c	c	c	c
8												
9												
10												
11												
12												
13												
14												
15					NO RECORD 8th. - 24th.							
16												
17												
18												
19												
20												
21												
22												
23												
24												
25	c	c	c	c	c	c	c	c	c	c	c	3.5
26	8.0	8.5	8.1	8.2	(8.4)	7.2	c	5.0	4.2f	3.5	a	a
27	7.5	6.3	b	4.2	5.3	3.8f	(3.4)f	c	a	a	a	3.5
28	7.2	7.0	8.2	7.5	7.0	5.6	c	2.9f	2.8f	2.5f	n	f
29	c	7.0	6.6	7.1	c	c	c	c	4.2	4.0	3.4	a
30	c	6.3	6.6	6.7	5.9	5.1	c	c	4.2f	a	a	a
31	5.9z	6.1	6.5	6.4z	6.5	5.8	c	c	2.8f	f	f	(3.5)f
Median	*	(6.6)	(6.6)	(6.7)	d5.9 (e6.9)	(5.6)	*	*	(4.2)	*	*	*
No.		6	6	7	6	5			5			

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND f°F2, MAY 1951

F1 LAYER DURING MAY 1951 AT MACQUARIE ISLAND



Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5°E.M.T. MACQUARIE ISLAND F1, MAY 1951 132.

HOURLY VALUES OF f°E OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

Day \ Hour	08	09	10	11	12	13	14	15	16
1									
2									
3									
4									
5				NO RECORD 1st. - 5th.					
6	1.7	2.1	2.3	2.6	b	b	2.4	2.1	b
7	b	b	c	c	c	c	c	c	1.6
8									
9									
10									
11									
12									
13									
14									
15				NO RECORD 8th. - 25th.					
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26	a	2.1	2.4	2.6	2.6	b	b	b	b
27	a	b	b	b	b	b	b	b	2.3
28	b	c	2.3	2.5	2.6	2.5	2.4	2.0	b
29	1.6	2.0	2.3	2.6	c	a	a	1.8	c
30	a	a	a	a	c	2.1	2.1	b	b
31	a	a	2.3	(2.4)	2.4	2.5	2.2	a	e
Median	*	*	2.3	2.6	*	*	*	*	*
No.			5	5					

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used; 157.5° E.M.T.

HOURLY VALUES OF fEs OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

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																								
2																								
3																								
4									NO	RECORD		1st. - 4th.												
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.5	5.3
6	3.7	b	e	e	e	e	e	e	4.4	g	g	g	b	b	g	b	c	c	c	c	c	c	2.1	b
7	3.3	4.4	3.2	3.8	2.8	3.8	e	b	b	b	c	c	c	c	c	c	b	e	c	c	c	c	c	c
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15									NO	RECORD		8th. - 24th.												
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.3
26	4.4	3.9	3.1	e	e	e	e	2.5	2.5	3.3	3.3	3.0	g	b	b	b	b	e	c	e	3.4	3.5	7.0	6.5
27	5.4	5.3	7.0	b	b	3.5	4.8	b	3.3	b	b	b	b	b	b	3.1	2.7	3.0	2.5	c	4.3	7.3	4.8	4.4
28	6.0	3.4	4.7	4.3	3.5	d4.4	d4.4	2.2	b	c	g	g	g	g	g	g	b	e	c	3.5	2.5	4.4	5.5	4.5
29	6.0	c	c	1.9	4.0	7.0	3.6	2.3	2.3	g	3.3	3.4	c	3.3	3.5	2.7	c	c	c	c	3.5	3.2	2.0	5.5
30	5.9	5.8	7.0	4.4	3.5	b	e	e	2.0	2.0	2.5	4.5	c	g	3.4	3.5	2.6	e	c	c	(7.0)	6.6	5.3	4.5
31	6.8	6.0	6.0	5.2	3.6	1.6	b	e	1.6	2.4	3.5	g	g	g	g	3.8	e	2.5	c	c	7.5	3.8	3.6	4.4
Median	5.6	4.8	4.7	3.8	3.5	3.5	**	2.2	2.4	2.0	2.9	3.0	*	*	**	3.1	*	**	*	*	3.9	4.1	4.6	4.9
No.	8	6	7	7	7	7	7	6	6	5	6	6			5	5		6			6	6	8	8

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND fEs. MAY 1951

HOURLY VALUES OF h'F2 OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

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																								
3																								
4									NO	RECORD		1st.	- 4th.											
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b
6	a	b	b	b	b	b	e	260	230	220	200	260	b	b	240	230	c	c	c	c	c	c	280	290
7	b	a	340	a	280	290	e	260	230	230	c	c	c	c	c	c	220	230	c	c	c	c	c	c
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15									NO	RECORD		8th.	- 24th.											
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	300
26	a	a	350	300	260	250	250	260	220	220	220	220	220	230	220	210	210	200	c	240	250	a	a	a
27	a	a	a	b	b	a	b	b	280	b	330	350	340	b	b	b	230	270	250	c	a	a	a	a
28	a	a	330	b	360	a	a	a	250	240	230	240	240	230	230	230	210	220	c	300	f	a	n	280
29	f	c	c	a	a	a	a	a	220	220	210	210	c	220	210	210	c	c	c	c	240	240	240	a
30	a	a	a	a	270	240	240	b	230	230	210	220	c	220	230	230	210	240	c	c	f	a	a	a
31	a	a	a	a	a	250	a	a	230	230	220	220	220	220	240	230	220	220	c	c	200	f	f	270
Median			*	*	*	*	*	*	(230)	(230)	(220)	(220)	*	(220)	(230)	(230)	(215)	(225)	*	*	*	*	*	*
No.									8	7	7	7		5	6	6	6	6						

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

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																								
2																								
3																								
4									NO	RECORD		1st.	-	4th.										
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b
6	330	320	340	330	320	360	300	310	250	260	260	280	b	b	270	260	c	c	c	c	c	c	(290)	300
7	f	330	340	350	310	290	270	270	250	260	c	c	c	c	c	c	c	c	c	c	c	c	c	c
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15									NO	RECORD		8th.	-	24th.										
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	300
26	340	a	350	320	300	(280)	270	310	250	250	280	250	250	260	260	260	(270)	280	c	300	310	320	a	a
27	a	a	a	b	b	300	b	b	290	320	350	(420)	400	350	b	310	250	320	260	c	a	a	a	a
28	440	360	340	360	360	a	300	350	280	c	270	280	270	270	280	270	270	290	c	320	f	320	n	f
29	f	c	c	a	a	a	a	340	250	250	260	250	c	250	260	240	c	c	c	c	290	290	280	a
30	a	a	a	350	270	260	280	250	270	260	260	280	c	260	260	270	240	280	c	c	f	a	a	a
31	a	a	a	330	340	310	290	280	260	240	230	250	250	250	280	280	270	280	c	c	230	f	f	300
Median	*	*	*	(340)	(315)	(295)	(285)	(310)	(255)	(260)	(260)	(280)	*	(260)	(265)	(270)	(270)	(280)	*	*	*	*	*	*
No.				6	6	6	6	7	8	7	7	7		6	6	7	5	5						

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND hpF2, MAY 1951

HOURLY VALUES OF h'E OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

Hour / Day	08	09	10	11	12	13	14	15	16
1									
2									
3									
4									
5				NO RECORD 1st. - 5th.					
6	a	b	b	b	b	b	b	b	b
7	b	b	c	c	c	c	c	c	b
8									
9									
10									
11									
12									
13									
14									
15				NO RECORD 8th. - 25th.					
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26	a	100	100	100	100	b	b	b	b
27	a	b	b	b	b	b	b	b	120
28	b	c	120	120	120	120	120	b	b
29	a	100	110	110	c	a	a	a	c
30	a	a	a	a	c	b	b	b	b
31	a	a	100	100	100	100	100	a	e
Median No.		*	*	*	*	*	*		*

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF h'Es OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

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																								
2																								
3																								
4										NO	RECORD		1st. - 4th.											
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	100
6	100	b	e	e	e	e	e	e	100	g	g	g	b	b	g	b	c	c	c	c	c	c	120	b
7	100	100	120	120	120	120	e	b	b	b	c	c	c	c	c	c	b	e	c	c	c	c	c	c
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15										NO	RECORD		8th. - 24th.											
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100
26	100	110	100	e	e	e	e	100	100	100	100	130	g	b	b	b	b	e	c	e	130	130	100	100
27	100	100	100	b	b	100	b	b	130	b	b	b	b	b	b	100	150	120	120	c	110	100	100	100
28	100	100	130	110	b	100	100	120	b	c	g	g	g	g	g	g	b	e	c	120	130	110	100	100
29	100	c	c	100	100	100	100	100	100	g	110	110	c	100	100	100	c	c	c	c	120	120	110	100
30	100	100	100	100	110	b	e	e	100	100	110	100	c	g	110	110	110	e	c	c	100	100	100	100
31	100	100	100	100	100	100	b	e	100	100	100	g	g	g	g	100	e	100	c	c	130	120	120	110
Median	100	100	100	100	*	100	*	*	100	*	*	*		*	*	*	*	*	*	*	125	115	105	100
No.	8	6	6	5		5			6												6	6	8	8

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING MAY 1951 AT MACQUARIE ISLAND

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																								
2																								
3																								
4									NO	RECORD		1st.	- 4th.											
5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b
6	3.1	3.0	3.0	3.0	3.0	2.9	3.2	3.0	3.5	3.5	3.3	3.3	b	b	3.4	3.4	c	c	c	c	c	c	(3.1)	3.0
7	f	3.1	2.8	3.0	3.0	3.2	3.2	3.3	3.5	3.5	c	c	c	c	c	c	c	c	c	c	c	c	c	c
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15									NO	RECORD		8th.	- 24th.											
16																								
17																								
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19																								
20																								
21																								
22																								
23																								
24																								
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.1
26	2.9	2.8	2.8	3.0	3.0	(2.9)	3.2	3.0	3.5	3.5	3.4	3.3	3.4	3.4	3.4	3.4	(3.3)	3.3	c	3.2	3.0	3.1	a	a
27	a	a	a	b	b	3.2	b	b	3.3	3.1	2.8	(2.6)	2.6	2.9	b	3.1	3.5	3.0	f	c	a	a	a	a
28	2.6	2.8	3.0	2.9	2.6	2.9	3.2	3.0	3.3	3.5	3.4	3.3	3.3	3.4	3.3	3.4	3.4	3.2	c	3.0	f	3.2	n	f
29	f	c	c	3.1	3.1	a	a	2.9	3.5	3.5	3.5	3.5	c	3.5	3.4	3.6	c	c	c	c	3.1	3.1	3.2	a
30	a	a	a	2.9	3.3	3.2	(3.2)	(3.5)	3.2	3.4	3.4	3.4	c	3.5	3.5	3.4	3.6	3.1	c	c	3.0	a	a	a
31	a	a	3.0	3.0	3.0	3.1	3.3	3.4	3.4	3.5	3.6	3.6	3.6	3.5	3.3	3.3	3.4	3.3	c	c	3.5	f	f	3.2
Median	*	*	(3.0)	(3.0)	(3.0)	(3.1)	(3.2)	(3.0)	(3.4)	(3.5)	(3.4)	(3.3)	*	(3.4)	(3.4)	(3.4)	(3.4)	(3.2)		*	*	*	*	*
No.			5	7	7	7	6	7	8	8	7	7		6	6	7	5	5						

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

HOURLY VALUES OF f°F2 OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	3.0f	c	(2.8)f	a	b	b	b	b	2.8	4.1z	5.4z	5.5
2	3.4	a	c	c	c	c	c	c	c	c	c	c
3	c	c	a	a	a	a	b	b	b	3.7	4.1	b
4	c	c	c	c	c	1.8	1.8	1.7	3.2z	4.2	4.7	5.5
5	c	c	2.4f	b	a	2.7fj	2.8f	2.8f	2.8	4.0	4.7z	c
6	2.9f	3.0f	2.8	3.0	(3.7)f	f	f	a	3.2	4.7	5.7z	6.0
7	b	b	a	a	3.2	3.0	2.6	2.1	3.2	4.2	4.8	5.8
8	a	a	a	2.3	1.9	1.8	1.5	2.1	3.6z	4.7	5.8	6.4
9	f	f	a	a	a	3.1	3.0	2.5	3.9	5.4	5.8	6.3
10	4.4	3.8	a	a	a	2.8	2.5	2.1	3.8z	5.2z	5.9z	7.0
11	a	3.8f	3.5f	3.2f	(2.8)f	s	s	2.7j	4.7z	5.9	6.8	7.6
12	a	a	a	a	f	2.6f	b	b	3.7z	5.8	6.8jv	8.2j
13	b	b	s	4.0	3.8f	3.3f	2.7f	b	4.1z	5.5	6.4z	7.0
14	c	c	c	c	c	c	c	c	c	c	c	c
15	2.2	2.1	2.1f	2.0	2.0	a	b	3.4	3.7	c	c	c
16	c	c	c	c	c	c	c	c	b	4.6z	b	6.6
17	b	b	b	3.3	2.7	2.6	2.3	2.2	3.8z	5.2	5.9	6.7
18	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c
20	a	b	b	b	b	2.2	2.2	1.7	3.4z	4.5z	5.3	6.0
21	2.2	2.1	2.0	1.9	1.8	1.8	1.8	1.7	3.5z	4.9	6.5	6.7
22	3.0f	b	a	3.0f	2.4f	2.0f	1.8f	3.7z	5.3z	6.3	7.7	7.8
23	c	c	c	c	c	c	c	c	c	c	c	c
24	(2.7)f	(2.6)f	(2.3)f	a	b	1.6	1.7	1.7	3.5z	5.3	6.3	6.9
25	3.2f	3.5f	(3.4)f	(3.4)f	(3.0)f	(2.5)f	(2.2)f	2.0	3.2	5.3	6.0	6.5
26	c	c	c	c	c	c	c	c	c	c	c	4.3
27	c	c	c	c	c	c	c	c	3.5	4.5z	4.9z	c
28	c	c	c	3.0	3.1f	c	c	c	2.9j	4.2	c	c
29	c	c	c	c	c	c	c	c	c	c	c	c
30	a	2.8f	3.1f	2.5f	2.5z	2.4f	(2.2)	a	3.0	4.3z	4.8z	5.3z
Median	(3.0)f	(2.9)f	(2.8)f	3.0	2.8	2.5	2.2	2.1	3.5	4.7	5.8	6.5
No.	9	8	9	11	12	15	14	14	21	22	20	19

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

HOURLY VALUES OF f°F2 OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	6.2	c	6.0	6.8	6.7	f	c	c	c	c	a	a
2	c	c	c	c	c	c	c	c	c	c	c	c
3	b	b	c	c	c	c	c	c	c	c	c	c
4	c	5.6	5.6	5.8	5.2	4.6	c	3.3f	3.1f	2.4f	3.0f	(2.8)f
5	c	5.8z	5.5z	5.5z	5.3	5.4	c	c	4.7	c	c	3.3
6	c	6.2	7.0	6.5	6.0	a	a	a	c	c	c	a
7	c	7.0j	7.0	(5.9)	a	f	c	3.8	3.7f	3.0f	2.6	a
8	(7.5)	7.5	6.9	c	c	c	c	3.3	2.7	a	a	f
9	6.4	7.5	8.0	7.7	7.0	c	c	3.1	a	3.5	3.1	f
10	c	6.8	6.8	6.7	6.9	5.5	c	3.4	3.1	2.8	2.2	b
11	7.6	7.4	7.5	7.3	6.2jf	c	c	c	c	c	c	2.8f
12	7.3	b	b	(7.3)	(7.0)	c	c	b	c	a	c	a
13	7.3	7.3	8.0j	7.2	c	c	c	3.2f	c	c	c	c
14	c	c	c	8.3	6.5	5.8	5.0	4.2	3.5	3.0	2.5	2.4
15	c	c	c	c	c	c	c	3.9	3.6	3.1	c	a
16	b	b	b	b	b	4.4	b	3.5	4.2j	b	b	a
17	7.0	6.8	7.3	7.0	6.7j	5.4	c	3.9	3.6	3.0f	3.0f	c
18	c	c	c	c	a	4.0	a	a	a	c	c	c
19	c	c	c	c	c	a	a	a	a	b	b	a
20	6.7	7.1	b	7.5	7.1	c	4.3	3.6	3.1	2.9	2.5	2.4
21	7.2	7.5	7.4	8.1	6.0	4.2f	3.8f	f	3.1f	c	(3.0)f	(3.4)f
22	7.5	7.7	8.0	c	c	c	4.5	3.8	c	c	c	c
23	c	c	c	7.8	(7.0)b	(6.6)f	4.4f	3.5f	4.6	(3.5)f	(3.7)f	(2.7)f
24	7.5	7.5	7.6	7.3	6.5	5.1	3.9	3.0	2.4	2.2f	a	a
25	6.6	6.8	7.2	7.0	6.0	a	4.0	c	c	c	c	c
26	c	c	c	4.9z	4.1	a	c	c	c	c	c	c
27	c	c	c	c	c	c	3.2	c	3.6f	3.1j	c	c
28	c	6.2j	6.0j	c	c	c	3.5	3.5	c	c	c	c
29	c	c	c	6.6j	6.8j	4.1f	3.4f	c	3.4	a	a	a
30	5.5	6.3	6.0	6.7	5.6	a	4.3	3.0f	3.0f	2.6f	2.6f	2.9f
Median	7.2	7.0	7.0	7.0	6.5	5.1	4.0	3.5	3.4	3.0	2.8	(2.8)f
No.	13	17	17	20	18	11	11	16	16	12	10	8

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

F1 LAYER DURING JUNE 1951 AT MACQUARIE ISLAND

F1 LAYER GENERALLY NOT DISTINCT

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND F1, JUNE 1951 142.

HOURLY VALUES OF f°E OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

Hour / Day	08	09	10	11	12	13	14	15	16
1	a	b	2.1	2.4	2.4	2.3	2.4	a	1.6
2	c	c	c	c	c	c	c	c	c
3	b	b	2.2	b	b	b	c	c	c
4	a	2.0	2.2	2.3	2.5	2.3	a	1.9	e
5	e	a	b	c	2.6	b	2.2	1.8	b
6	a	2.0	2.3	2.6	c	c	a	2.0f	a
7	a	2.1	a	a	c	2.6	2.5f	2.1	a
8	a	2.0	2.4	a	b	2.4	2.3h	c	c
9	1.7	a	b	b	2.5	2.4	a	b	e
10	e	2.0	a	a	c	a	a	1.8	e
11	a	a	a	a	a	2.5	2.2	b	e
12	b	2.1	b	2.6	a	b	b	b	b
13	b	a	a	a	b	b	2.1	1.7	c
14	c	c	c	c	c	c	c	b	b
15	b	c	c	c	c	c	c	c	c
16	b	b	b	b	b	b	b	b	b
17	a	2.1	2.4	b	b	b	b	b	b
18	c	c	c	c	c	c	c	c	a
19	c	c	c	c	c	c	c	c	c
20	a	a	2.2	2.5	2.4	2.4	b	b	b
21	b	a	a	a	a	a	2.2	1.7	e
22	1.9	2.3	2.5	2.5	2.3	2.2h	1.9h	c	c
23	c	c	c	c	c	c	c	b	b
24	1.5	1.9	2.2	2.3	2.5	2.5	2.2	a	e
25	1.4	1.8f	2.2	2.3f	2.5	a	2.2	a	f
26	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	c	c	c
30	a	1.9	2.2	2.3	2.5h	a	2.0	1.8	e
Median	1.4	2.0	2.2	2.4	2.5	2.4	2.2	1.8	o
No.	6	11	11	9	9	9	11	8	8

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND f°E, JUNE 1951

HOURLY VALUES OF fEs OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

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	1.7	c	e	4.0	b	2.5	b	2.4	2.2	2.0	2.4	g	g	g	4.0	2.4	2.5	e	c	c	c	c	5.6	5.6
2	3.9	5.5	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
3	c	c	3.9	3.3	3.3	3.7	b	3.8	b	b	3.9	b	b	b	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	e	e	e	2.1	2.4	2.4	2.4	g	g	2.8	g	g	e	c	e	2.4	2.5	3.5	3.5
5	c	c	e	b	5.0	3.4	1.8	e	g	2.7	b	c	g	b	g	g	b	b	c	c	e	c	c	4.3
6	4.3	4.3	b	4.1	4.0	4.2	3.6	4.0	2.8	g	g	g	c	c	2.6	g	2.2	3.6	5.9	5.7	c	c	c	4.4
7	6.0	4.4	5.5	4.2	4.0	3.8	3.9	3.5	2.0	2.4	2.8	4.0	c	g	g	g	5.7	4.4	c	4.4	3.8	3.0	3.2	4.4
8	4.4	d4.4	4.5	5.5	3.5	3.2	e	e	2.1	3.4	3.2	2.8	b	g	g	c	c	c	c	3.7	4.1	3.3	4.2	4.0
9	3.6	e	4.3	5.0	4.2	4.4	2.2	e	g	2.5	b	g	g	g	2.5	1.9	g	c	c	1.9	4.3	4.0	4.5	4.4
10	4.4	4.3	3.6	4.4	4.4	2.4	1.8	e	g	2.7	2.4	2.8	c	2.7	2.6	g	g	e	c	e	e	e	2.4	b
11	4.1	2.0	e	c	e	e	e	4.0	3.8	4.3	3.5	4.2	s	g	g	g	g	e	c	c	c	c	c	4.2
12	4.4	4.4	5.5	d4.4	4.2	2.1	b	b	b	2.3	3.5	g	2.8	b	b	b	b	b	c	4.0	c	7.6	c	6.3
13	4.5	5.4	4.0	4.0	3.5	4.0	3.0	b	b	2.7	4.0	4.1	3.7	b	g	g	c	c	c	3.4	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	e	3.1	2.3	2.1	e	e	e
15	4.0	4.0	1.9	1.9	3.9	4.3	b	b	b	c	c	c	c	c	c	c	c	c	c	3.2	2.4	3.1	c	5.4
16	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b	b	b	4.5	b	b	d4.4
17	4.3	5.4	6.0	3.6	e	e	1.6	3.1	3.2	4.1	g	2.8	b	b	b	b	b	b	c	e	e	e	e	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.2	4.4	d4.4	5.3	6.1	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.2	4.2	7.5	8.5	b	6.2	4.3
20	5.5	5.2	b	b	5.2	3.9	2.5	1.8	2.9	4.2	4.1	4.2	2.7	g	b	b	b	c	3.3	2.7	2.2	4.2	1.6	1.5
21	1.7	3.0	3.5	4.0	1.7	e	e	e	2.6	2.3	3.9	4.2	2.8	2.6	g	2.3	g	2.2	1.8	e	2.0	c	2.1	4.4
22	3.8	b	4.0	4.0	1.4	e	e	2.8	2.4	2.8	g	g	g	g	g	c	c	c	e	e	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	e	e	e	4.3	3.9	2.4
24	2.4	1.8	3.7	4.1	b	2.1	e	1.8	2.3	2.7	g	2.7	4.3	4.4	g	2.1	g	e	e	e	e	3.5	4.7	4.2
25	2.9	4.4	3.7	4.2	4.3	4.2	4.7	4.6	4.0	g	g	g	2.8	3.1	2.5	2.0	g	5.2	5.0	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	d4.4	c	c	d4.4	d4.4	d4.4	d4.4
27	4.1	c	c	c	4.3	c	c	c	c	c	c	d4.4	c	c	c	c	c	c	c	c	c	c	c	c
28	d4.4	d4.4	d4.4	d4.4	c	c	c	4.0	c	c	c	c	c	c	c	c	c	c	d4.4	d4.4	d4.4	c	c	c
29	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.5	3.8	4.2	6.5
30	6.3	3.7	2.5	4.0	3.1	4.3	4.2	3.9	3.2	g	2.2	3.5	g	7.5	2.2	3.5	g	5.4	1.8	4.0	4.0	3.8	3.2	6.8
Median	4.2	4.4	3.8	4.1	4.0	3.3	1.8	2.6	2.4	2.4	2.4	2.8	2.7	**	**	**	**	2.9	3.2	3.0	3.1	3.5	3.7	4.4
No.	20	17	18	18	18	20	16	18	16	18	17	18	12	13	15	13	12	14	12	20	20	15	16	20

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

HOURLY VALUES OF h'F2 OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

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	c	300	a	b	b	b	b	230	210	210	210	210	c	210	c	230	230	c	c	c	c	a	a
2	a	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
3	c	c	a	a	a	a	b	b	b	b	220	b	b	b	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	300	280	s	240	240	220	220	220	220	220	220	220	220	c	320	280	280	a	310
5	c	c	290	b	a	b	260	250	240	230	230	c	230	250	220	230	230	230	c	c	240	c	c	a
6	260	280	290	a	a	a	250	a	a	230	210	220	c	230	230	240	260	a	a	a	c	c	c	a
7	b	b	a	a	b	b	b	a	250	250	250	240	c	240	250	250	a	f	c	a	a	270	a	a
8	a	a	a	a	a	a	b	b	250	240	240	230	230	260	260	c	c	c	c	280	a	a	a	f
9	f	f	a	a	a	300	290	260	240	240	230	230	230	230	240	220	220	c	c	310	a	280	220	a
10	a	a	a	a	a	a	270	260	240	230	220	230	c	230	230	220	220	210	c	260	260	260	260	b
11	a	270	270	250	250	s	s	250	240	220	220	250	220	230	220	220	230	240	c	c	c	c	c	a
12	a	a	a	a	a	280	b	b	250	220	230	230	230	b	b	b	b	230	c	b	c	a	c	a
13	b	b	300	a	280	280	a	b	b	240	230	230	240	230	240	220	c	c	c	320	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	220	200	210	220	230	250	240	250	280
15	280	a	a	270	260	a	b	b	b	250	c	c	c	c	c	c	c	c	c	a	290	300	c	a
16	c	c	c	c	c	c	c	c	b	b	b	250	b	b	b	b	260	260	b	b	a	b	b	a
17	b	b	b	a	260	260	270	270	240	220	230	230	240	230	230	220	200	220	c	250	250	250	260	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	b	b	a
20	a	b	b	b	b	340	280	a	250	240	230	230	250	230	230	230	220	c	230	260	260	270	270	280
21	a	a	a	310	300	e	e	e	240	210	210	220	210	210	220	200	210	280	320	260	250	c	280	260
22	330	b	a	320	260	260	260	230	220	220	230	220	220	230	210	c	c	c	210	250	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	230	220	220	240	300	250	250	(300)f	a
24	280	270	300	a	b	b	260	e	230	200	200	200	200	200	230	200	200	200	210	250	250	280	a	a
25	280	250	250	260	250	a	a	a	230	210	220	220	220	220	220	220	220	a	a	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	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	c	c	c	c	c	c	c	c	c	c	c	c	c	230	240	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	250	220	c	c	c	320	a	a	a
30	a	320	280	270	250	270	a	a	a	220	210	220	220	230	220	220	240	a	260	200	230	260	290	300
Median	(280)	(270)	(290)	(270)	(260)	(280)	270	(260)	240	230	220	230	220	230	230	220	220	225	(230)	260	250	270	(275)	(280)
No.	6	5	8	6	8	9	10	8	15	19	19	18	15	17	18	17	17	12	7	13	12	11	8	5

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

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	c	390	a	b	b	b	b	290	240	240	230	250	c	260	250	280	f	c	c	c	c	a	a
2	a	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
3	c	c	a	a	a	a	b	b	b	290	300	b	b	b	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	320	300	320	280	250	260	240	c	250	270	250	250	260	c	380	330	290	310	320
5	c	c	300	b	a	290	280	270	270	250	260	c	c	290	260	260	290	280	c	c	270	c	c	a
6	280	300	330	330	320	f	f	a	270	250	230	260	c	260	260	270	310	a	a	a	c	c	c	a
7	b	b	a	a	b	300	300	a	280	280	270	260	c	(280)	300	(300)	a	f	c	330	270	310	320	a
8	a	a	a	330	320	320	b	b	280	260	270	280	270	280	290	c	c	c	c	300	a	a	a	f
9	f	f	a	a	a	300	300	290	260	260	300	270	280	280	270	280	250	c	c	390	a	300	230	a
10	350	a	a	a	a	300	290	300	270	260	250	250	c	270	260	260	290	290	c	310	330	330	290	b
11	a	290	290	290	290	s	s	300	260	260	260	280	250	280	280	280	f	c	c	c	c	c	c	a
12	a	a	a	a	f	320	b	b	280	270	270	250	280	b	b	b	b	c	c	b	c	a	c	a
13	b	b	s	a	290	300	320	b	270	270	270	290	270	270	290	260	c	c	c	340	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	260	280	270	260	260	290	280	300	330
15	330	350	330	320	310	a	b	b	300	c	c	c	c	c	c	c	c	c	c	350	300	300	c	a
16	c	c	c	c	c	c	c	c	b	290	b	270	b	b	b	b	b	290	b	b	a	b	b	a
17	b	b	b	350	260	280	290	280	270	250	260	260	270	270	270	260	300	270	c	300	280	290	330	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	340	a	a	a	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	b	b	a
20	a	b	b	b	b	340	290	a	300	270	270	270	280	260	b	270	280	c	270	310	300	310	310	320
21	330	340	340	350	330	320	300	290	280	250	240	250	260	250	260	240	280	340	350	f	260	c	f	f
22	340	b	a	330	270	270	290	270	270	260	270	230	250	280	260	c	c	c	290	300	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	250	(290)	(260)	280	320	300	f	f	(320)
24	340	(360)	(340)	a	b	b	280	280	260	250	220	260	240	250	250	250	230	240	270	290	300	310	a	a
25	300	300	(290)	f	(280)	(280)	(280)	270	270	240	240	250	250	260	260	260	260	a	350	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	280	c	c	c	c	330	a	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	270	250	c	c	c	c	c	c	c	c	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	270	c	c	c	c	c	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	260	c	c	360	a	a	a
30	a	330	300	280	280	300	(350)	a	300	240	240	250	240	260	240	240	290	a	290	210	280	300	310	340
Median	(330)	(330)	(330)	(330)	290	300	290	285	270	260	260	260	260	270	260	260	280	270	(285)	310	300	300	(310)	(320)
No.	8	7	9	8	10	14	13	10	20	22	19	19	13	16	16	17	15	11	8	14	13	10	8	5

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

HOURLY VALUES OF h'E OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

Hour / Day	08	09	10	11	12	13	14	15	16
1	a	100	100	100	100	100	100h	a	a
2	c	c	c	c	c	c	c	c	c
3	b	b	100	b	b	b	c	c	c
4	a	100	110	100	100	100	a	140	e
5	e	a	b	c	130	b	110	b	b
6	a	b	110	100	c	c	a	b	a
7	a	a	a	a	c	110	120	b	a
8	a	100	100	a	b	110	120h	c	c
9	b	a	b	100	100	120	a	b	e
10	e	a	a	a	c	a	a	b	e
11	a	a	a	a	a	100	100	b	e
12	b	100	b	120	a	b	b	b	b
13	b	a	a	a	b	b	100	100	c
14	c	c	c	c	c	c	c	b	b
15	b	c	c	c	c	c	c	c	c
16	b	b	b	b	b	b	b	b	b
17	a	100	100	b	b	b	b	b	b
18	c	c	c	c	c	c	c	c	a
19	c	c	c	c	c	c	c	c	c
20	a	a	100	100	100	100	b	b	b
21	b	a	a	a	a	a	100	100	e
22	a	100	100	100	100	100h	100h	c	c
23	c	c	c	c	c	c	c	b	b
24	a	100	100	100	100	100	100	a	e
25	a	110	110	100	100	a	100	a	f
26	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	c	c	c
30	a	110	100	100	100h	a	100	a	e
Median	*	100	100	100	100	100	100	*	e
No.		9	11	10	9	9	11		7

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

HOURLY VALUES OF h'Es OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

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	120	c	e	100	b	100	b	100	100	100	100	g	g	g	100	100	100	e	c	c	c	c	100	100
2	100	100	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
3	c	c	100	100	100	100	b	100	b	b	100	b	b	b	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	e	e	e	110	100	120	100	g	g	100	g	g	e	c	e	150	120	110	110
5	c	c	e	b	100	120	100	e	g	100	b	c	g	b	g	g	b	b	c	c	e	c	c	110
6	110	110	b	100	100	100	110	100	100	g	g	g	c	c	100	g	160	100	100	100	c	c	c	110
7	100	100	100	100	100	100	100	110	110	100	100	130	c	g	g	g	100	100	c	110	120	130	130	110
8	100	100	100	100	110	100	e	e	110	100	130	100	b	g	g	c	c	c	c	130	120	120	120	120
9	120	e	110	100	100	100	110	e	g	110	b	g	g	g	100	120	g	c	c	150	120	120	110	100
10	100	100	100	100	100	100	140	e	g	100	100	100	c	100	100	g	g	e	c	e	e	e	150	b
11	100	120	e	e	e	e	e	100	100	100	100	100	100	g	g	g	g	e	c	c	c	c	c	100
12	100	100	100	100	100	120	b	b	b	100	120	g	100	b	b	b	b	b	c	110	c	100	c	100
13	100	100	100	100	110	110	110	b	b	100	100	100	100	b	g	g	c	c	c	120	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	e	100	100	100	e	e	e
15	110	100	100	110	100	100	b	b	b	c	c	c	c	c	c	c	c	c	c	130	110	100	c	100
16	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b	b	b	110	b	b	100
17	100	100	100	100	e	e	100	100	100	100	g	110	b	b	b	b	b	b	c	e	e	e	e	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	110	110	100	100	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	110	100	b	100	100
20	100	100	b	b	100	100	150	110	100	100	100	100	100	g	b	b	b	c	100	100	120	100	110	110
21	110	100	100	100	100	e	e	e	100	100	120	110	120	100	g	150	g	e	e	e	120	c	120	110
22	100	b	100	100	100	e	e	100	100	100	g	g	g	g	g	c	c	c	e	e	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	e	e	e	120	120	120
24	110	120	140	100	b	110	e	100	100	100	g	100	100	100	g	130	g	e	e	e	e	160	110	110
25	120	100	100	100	100	100	100	100	110	g	g	g	100	100	120	120	g	100	100	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	c	c	110	110	110	110
27	c	c	c	c	110	c	c	c	c	c	c	100	c	c	c	c	c	c	c	c	c	c	c	c
28	120	120	100	100	c	c	100	c	c	c	c	c	c	c	c	c	c	c	c	c	100	c	c	c
29	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	120	120	110	90
30	90	100	110	100	100	100	100	100	100	g	140	130	g	100	100	100	g	100	110	150	110	110	120	110
Median	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	120	*	100	100	110	110	120	110	110
No.	19	16	15	17	16	15	11	11	13	15	12	12	7	5	7	6		7	7	12	15	12	14	19

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

HOURLY VALUES OF (M3000)F2 OBSERVED DURING JUNE 1951 AT MACQUARIE ISLAND

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	3.0	c	2.7	a	b	b	b	b	3.0	3.6	3.5	3.5	3.6	c	3.4	3.4	3.2	f	c	c	c	c	a	a
2	2.8	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
3	c	c	a	a	a	a	b	b	b	3.3	3.2	b	b	b	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	3.0	3.1	3.0	3.3	3.5	3.4	3.5	c	3.5	3.4	3.5	3.3	3.2	c	2.8	3.0	3.1	2.9	(3.0)
5	c	c	3.2	b	a	b	3.3	3.4	3.5	3.5	3.5	c	c	3.3	3.5	3.4	3.2	3.2	c	c	3.2	c	c	a
6	3.3	3.1	3.0	2.9	2.9	f	f	a	3.5	3.6	3.7	3.4	c	3.4	3.4	3.2	3.1	a	a	a	c	c	c	a
7	b	b	a	a	2.8	3.1	3.1	3.0	3.3	3.3	3.4	3.5	c	c	3.0	(3.2)	a	f	c	2.9	3.1	3.0	3.0	a
8	a	a	a	2.9	3.1	3.1	3.2	2.6	3.3	3.4	3.4	3.3	(3.3)	3.2	3.2	c	c	c	c	3.1	a	a	a	f
9	f	f	a	a	a	3.1	3.0	3.2	3.4	3.4	3.3	3.3	3.2	3.3	3.3	3.3	3.3	c	c	2.7	a	3.1	2.8	a
10	3.0	2.9	a	a	a	2.8	2.9	3.1	3.4	3.3	3.5	3.6	c	3.4	3.4	3.4	3.3	3.2	c	3.1	2.9	3.0	3.1	b
11	a	3.1	3.1	3.1	(3.2)	s	s	s	3.4	3.4	3.5	3.4	3.3	3.3	3.4	3.3	f	c	c	c	c	c	c	3.0
12	a	a	a	a	f	2.8	b	b	3.3	3.3	3.4	3.5	3.2	b	b	b	b	c	c	b	c	a	c	a
13	b	b	s	2.8	2.9	3.0	3.1	b	3.4	3.4	3.3	3.3	3.4	3.4	3.3	3.3	c	c	c	2.9	c	c	c	c
14	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.2	3.2	3.2	3.3	3.1	3.2	3.2	3.0
15	3.0	2.9	2.9	3.1	3.0	a	b	b	3.2	c	c	c	c	c	c	c	c	c	c	2.8	3.0	3.3	c	a
16	c	c	c	c	c	c	c	c	b	3.3	b	3.4	b	b	b	b	b	3.2	b	b	a	b	b	a
17	b	b	b	2.8	3.1	3.2	3.1	3.2	3.3	3.4	3.5	3.5	3.3	3.3	3.3	3.4	3.3	3.3	c	3.2	3.3	3.3	3.0	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	2.8	a	a	a	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	b	b	a
20	a	b	b	b	b	3.0	3.1	a	3.1	3.3	3.3	3.4	3.2	3.5	b	3.3	3.3	c	3.4	3.2	3.3	3.1	3.2	3.1
21	3.1	3.0	2.9	3.0	3.0	3.0	3.1	3.2	3.4	3.5	3.6	3.5	3.6	3.5	3.3	3.5	3.2	3.0	2.9	f	3.1	c	f	f
22	2.9	b	a	3.0	3.2	3.3	3.2	3.4	3.4	3.3	3.4	3.6	3.5	3.4	3.4	c	c	c	3.2	3.2	c	c	c	c
23	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	(3.3)	(3.4)	3.2	3.0	3.0	f	(2.8)f	(2.9)f
24	(2.8)f	(2.8)	(2.9)	a	b	3.1	3.2	3.3	3.5	3.6	3.6	3.4	3.7	3.6	3.5	3.5	3.5	3.2	3.3	3.2	3.2	3.1	a	a
25	3.2	3.0	(3.1)	f	(3.0)	(3.1)	(3.2)	3.2	3.4	3.4	3.5	3.5	3.5	3.4	3.4	3.2	3.2	a	2.8	c	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	3.0	c	c	c	c	2.9	a	c	c	c	c	c	c
27	c	c	c	c	c	c	c	c	3.3	3.5	c	c	c	c	c	c	c	c	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	3.5	c	c	c	c	c	c	c	c	3.4	3.4	c	c	c	c
29	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.4	c	c	2.8	a	a	a
30	a	2.9	2.9	3.3	3.3	3.0	(2.7)	a	3.4	3.6	3.6	3.6	3.6	3.4	3.5	3.3	3.3	a	3.1	3.6	3.3	3.1	2.9	3.0
Median	(3.0)	(3.0)	(2.9)	(3.0)	3.0	3.0	3.1	3.2	3.4	3.4	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.2	(3.2)	3.1	3.1	3.1	(3.0)	(3.0)
No.	9	8	9	9	11	14	14	11	20	22	19	19	13	15	16	17	15	11	9	15	13	10	9	6

23. Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND (M3000)F2, JUNE 1951

HOURLY VALUES OF f°F2 OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	2.6f	2.4f	2.7f	2.4f	2.3	1.9	1.7	b	b	4.1	5.1	5.8
2	a	a	a	b	b	b	b	c	c	c	c	c
3	a	a	a	a	a	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	c	c
5	a	a	a	a	a	a	1.7	1.6	2.6	3.9z	4.3z	5.1
6	a	a	2.0	c	c	c	c	c	c	c	c	c
7	2.7	a	2.8	2.3f	2.2f	2.2f	2.4f	2.0f	3.4z	5.1z	5.7z	6.5
8	3.0	2.9	2.8	2.3f	a	2.4f	2.1f	1.8f	c	c	c	c
9	2.4	2.3	2.4	2.5f	2.7f	c	c	c	c	c	c	c
10	(3.5)f	3.5f	3.8	c	c	c	c	c	c	c	c	c
11	3.0f	(2.7)f	3.0f	3.0f	3.0f	3.0f	3.0f	b	3.9	5.5	6.5p	6.8
12	c	a	a	2.6f	2.7f	2.4f	2.5	2.1	4.1z	5.6z	6.2	7.0
13	f	a	3.0f	2.8f	2.6f	a	2.8f	2.5	3.9z	5.5	5.9	7.2
14	3.3	2.4f	2.4f	2.4f	2.3f	2.3f	2.1f	1.9f	3.8	5.7	7.0	6.9
15	3.9f	3.2f	3.5f	2.9f	2.8f	2.6f	2.5f	1.9f	4.0	5.7z	6.6	7.9
16	3.8f	2.9f	3.2f	3.0f	2.6f	2.2f	c	c	c	c	c	c
17	a	a	a	b	4.3f	3.8f	3.4	b	3.9	5.1	6.0	6.3
18	c	a	a	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	c	c	c
20	3.2f	s	f	3.2f	2.6f	a	3.2f	2.6f	3.7	4.6z	5.2	5.8
21												
22												
23												
24												
25					NO RECORD 21st. - 30th.							
26												
27												
28												
29												
30												
31	c	c	c	c	c	c	c	c	c	c	c	c
Median	3.1f	(2.8)f	2.8f	2.6f	2.6f	(2.4)f	2.5f	(2.0)f	(3.9)	5.3	6.0	6.6
No.	10	8	11	11	11	9	11	8	9	10	10	10

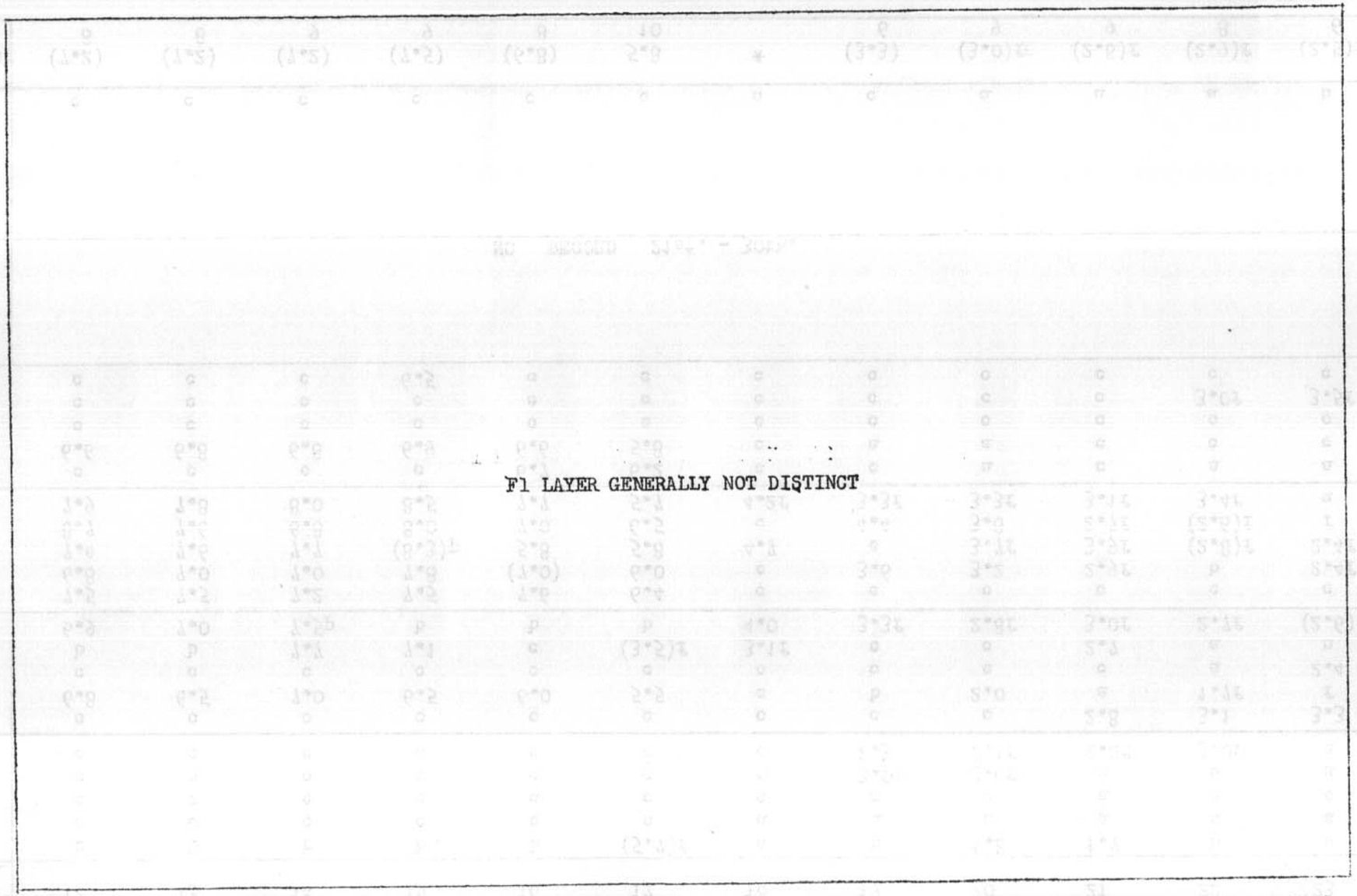
24. Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND f°F2, JULY 1951 150

HOURLY VALUES OF f°F2 OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	b	b	b	b	b	(5.7)f	c	b	1.8	1.7	b	a
2	c	c	c	c	c	c	a	a	a	a	a	a
3	c	c	c	c	c	c	c	c	c	a	a	c
4	c	c	c	c	c	c	c	3.0f	3.0f	a	a	a
5	c	c	c	c	c	c	c	2.3	2.1f	2.0f	3.0f	a
6	c	c	c	c	c	c	c	c	c	2.8	3.1	3.3
7	6.8	6.5	7.0	6.5	6.0	5.5	c	b	2.0	a	1.7f	f
8	c	c	c	c	c	c	c	c	c	c	a	2.4
9	b	b	7.7	7.1	c	(3.5)f	3.1f	c	c	2.7	a	n
10	6.9	7.0	7.5p	b	b	b	4.0	3.3f	2.8f	3.0f	2.7f	(2.6)f
11	7.5	7.5	7.2	7.5	7.6	6.4	c	c	c	c	c	c
12	6.8	7.0	7.0	7.8	(7.0)	6.0	c	3.6	3.2	2.9f	b	2.4f
13	7.4	7.6	7.7	(8.3)p	5.8	5.8	4.7	c	3.7f	3.9f	(2.8)f	2.4f
14	8.7	7.6	6.8	8.0	7.0	6.5	c	4.4	3.8	2.7f	(2.6)f	f
15	7.9	7.8	8.0	8.5	7.7	5.7	4.2f	3.3f	3.3f	3.1f	3.4f	a
16	c	c	c	c	6.7	6.2	c	c	a	c	a	a
17	6.6	6.8	6.8	6.9	6.6	5.8	c	a	a	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c	c	3.0f	3.5f
20	c	c	c	6.5	c	c	c	c	c	c	c	c
21												
22												
23												
24												
25					NO RECORD 21st. - 30th.							
26												
27												
28												
29												
30												
31	c	c	c	c	c	c	c	c	a	a	a	b
Median	(7.2)	(7.2)	(7.2)	(7.5)	(6.8)	5.8	*	(3.3)	(3.0)f	(2.8)f	(2.9)f	(2.5)f
No.	8	8	9	9	8	10		6	9	9	8	6

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

F1 LAYER DURING JULY 1951 AT MACQUARIE ISLAND



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

Time used: 157.5° E.M.T.

HOURLY VALUES OF foE OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

Hour / Day	08	09	10	11	12	13	14	15	16
1	b	b	2.2	2.3	b	b	b	b	b
2	c	c	c	c	c	c	c	c	c
3	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c
5	c	c	c	c	c	c	c	c	c
6	c	c	c	c	c	c	c	c	c
7	b	2.0	2.3	2.4	b	b	b	2.1	b
8	c	c	c	c	c	c	c	c	c
9	c	c	c	c	2.7	b	2.5	a	c
10	c	c	c	c	2.5	2.5	b	b	b
11	b	a	2.4	2.5	2.7	2.6	2.3	c	a
12	1.7	2.1	2.5	2.6	b	2.7	b	a	a
13	b	2.1	2.4	b	2.5	2.5	2.3	a	a
14	a	2.2	2.2	2.6	2.6	2.5	2.3	2.0	1.5
15	1.7	2.1h	2.4	b	b	2.7	b	b	b
16	c	c	c	c	c	c	c	c	a
17	b	2.1	2.3	2.5	2.6	2.6	a	2.1	a
18	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c
20	1.6	2.1	c	c	c	c	c	c	c
21									
22									
23									
24									
25				NO	RECORD	21st. - 30th.			
26									
27									
28									
29									
30									
31	c	c	c	c	c	c	c	c	c
Median	*	2.1	2.4	2.5	2.6	2.6	*	*	*
No.		7	8	6	6	7			

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

HOURLY VALUES OF fEs OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

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	4.6	4.0	4.2	4.0	1.7	3.3	1.2	b	b	3.8	4.1	3.6	b	b	b	b	b	3.0	c	b	b	5.2	b	5.2
2	5.5	5.5	5.9	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	7.5	5.5	9.0	8.5	4.5	7.5
3	6.0	5.4	5.4	4.4	4.3	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.2	4.4	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.4	4.3	5.4	7.0	4.4
5	3.0	4.1	4.4	4.4	4.7	3.1	2.5	e	1.8	2.4	2.7	2.5	c	c	c	c	c	c	c	1.8	1.9	2.1	4.9	5.4
6	4.4	3.1	2.0	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.0	3.5	6.0
7	3.8	4.4	3.5	2.7	2.1	4.0	2.0	e	2.0	2.2	g	2.7	b	2.8	b	2.3	1.9	e	c	b	4.2	3.7	3.4	5.5
8	2.1	1.8	e	e	4.5	4.3	1.3	e	c	c	c	c	c	c	c	c	c	c	c	c	c	c	6.0	4.1
9	5.3	3.2	e	e	e	c	c	c	c	c	c	c	4.2	b	g	4.0	c	1.5	1.8	c	c	4.1	4.8	4.2
10	3.8	4.7	4.1	c	c	c	c	c	c	c	c	c	2.7	g	b	b	b	b	2.5	2.1	1.8	1.8	1.8	4.0
11	3.8	4.7	2.3	1.5	e	e	e	2.8	b	4.2	2.8	g	2.9	2.7	2.6	g	1.7	e	c	c	c	c	c	c
12	c	4.8	4.6	2.5	3.9	2.1	e	e	2.1	2.6	g	3.0	b	g	b	2.1	4.7	1.8	c	e	e	e	b	e
13	5.5	4.7	1.9	1.5	2.0	4.7	3.3	e	2.8	2.7	g	b	g	g	g	2.1	4.4	e	c	e	2.5	4.3	2.5	6.3
14	4.4	2.0	1.7	1.5	4.0	e	e	3.3	4.0	2.7	2.8	3.0	4.0	g	g	g	1.9	e	c	e	e	3.9	4.2	7.0
15	8.6	4.3	4.5	2.0	1.5	1.5	2.8	e	3.9	g	2.8	b	b	g	b	b	1.9	e	e	2.5	3.5	4.1	8.7	5.2
16	4.4	7.7	4.8	4.0	4.0	3.5	c	c	c	c	c	c	c	c	c	c	2.2	4.1	c	c	6.5	5.4	c	4.7
17	5.3	5.5	6.3	4.2	4.0	3.5	4.0	b	b	g	2.6	2.8	g	g	2.5	g	1.5	e	c	7.3	4.5	c	c	c
18	c	6.4	6.7	c	c	c	c	c	c	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	c	c	c	c	c	c	c	c	c	c	c	c	2.3	4.2
20	2.2	s	s	e	s	4.9	2.5	e	g	g	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21																								
22																								
23																								
24																								
25											NO	RECORD		21st. - 30th.										
26																								
27																								
28																								
29																								
30																								
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.2	10.3	5.3	b
Median	4.4	4.7	4.4	2.2	3.9	3.4	2.0	**	2.1	2.5	2.7	2.8	2.8	**	**	2.1	1.9	**	1.8	2.3	3.8	4.1	4.4	5.2
No.	16	17	17	14	13	12	11	9	7	10	9	7	6	8	5	7	8	10	5	8	12	15	14	15

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

HOURLY VALUES OF h'F2 OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

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	290	260	260	270	b	b	b	230	220	b	b	b	b	220	220	c	b	b	b	b	a
2	a	a	a	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	a	a
3	a	a	a	a	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	a
5	a	a	a	a	a	a	320	b	270	240	230	230	c	c	c	c	c	c	c	270	a	a	240	a
6	a	a	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	240	280	a
7	a	a	a	a	a	260	250	250	230	220	220	210	230	220	230	210	220	220	c	b	a	a	a	f
8	260	300	280	280	a	a	260	260	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
9	a	a	290	280	270	c	c	c	c	c	c	c	220	240	240	230	c	260	250	c	c	a	a	n
10	290	300	300	c	c	c	c	c	c	c	c	c	230	230	230	230	b	240	280	300	250	250	260	260
11	280	290	300	290	290	260	240	b	b	220	220	220	220	220	220	220	200	200	c	c	c	c	c	c
12	c	a	a	a	260	250	230	290	240	220	200	220	220	230	220	220	240	200	c	240	250	260	b	b
13	a	a	300	270	300	a	260	260	220	220	220	220	200	220	220	210	220	220	250	c	280	290	300	a
14	a	310	300	280	270	260	250	240	220	220	200	200	230	210	200	230	200	180	c	240	230	a	a	270
15	270	320	a	280	260	250	230	a	220	220	220	230	230	220	220	220	210	180	250	290	300	310	350	a
16	a	a	a	a	250	320	c	c	c	c	c	c	c	c	c	c	250	230	c	c	a	c	a	a
17	a	a	a	b	a	270	280	b	b	250	230	240	260	240	220	230	220	220	c	a	a	c	c	c
18	c	a	a	c	c	c	c	c	c	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	c	c	c	c	c	c	c	c	c	c	c	c	320	300
20	270	s	250	280	300	a	250	250	230	220	220	220	c	c	c	230	c	c	c	c	c	c	c	c
21																								
22																								
23																								
24																								
25											NO	RECORD	21st.	30th.										
26																								
27																								
28																								
29																								
30																								
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	b
Median	(270)	(300)	(300)	(280)	(270)	(260)	250	(255)	(230)	(220)	220	220	(230)	(220)	(220)	225	(220)	220	*	(270)	(250)	(260)	(290)	*
No.	5	5	7	8	9	8	11	6	7	9	10	10	9	9	9	10	9	11		5	5	5	6	

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

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	320	310	a	310	290	290	280	b	b	250	250	250	b	b	b	b	b	250	c	b	320	b	b	a
2	a	a	a	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	a	a
3	a	a	a	a	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	320	a	a	a
5	a	a	a	a	a	a	330	290	290	270	240	260	c	c	c	c	c	c	c	300	320	a	250	a
6	a	a	340	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	270	280	390
7	a	a	a	310	300	260	260	270	270	250	250	250	250	260	260	230	260	260	c	b	a	a	a	f
8	310	340	330	320	a	320	280	280	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
9	370	350	330	310	320	c	c	c	c	c	c	c	b	b	270	270	c	310	310	c	c	a	a	n
10	f	330	330	c	c	c	c	c	c	c	c	c	260	260	290	b	b	b	330	370	270	270	270	270
11	340	310	330	330	330	320	300	b	290	240	250	250	270	260	250	260	260	280	c	c	c	c	c	c
12	c	a	a	340	270	260	250	320	280	260	250	250	260	270	260	260	(270)	270	c	280	300	320	b	330
13	f	a	320	300	310	a	280	290	270	270	260	290	260	280	300	(250)	260	290	290	c	390	320	(330)	f
14	390	310	320	310	310	300	290	260	260	240	220	250	250	240	240	260	240	250	c	270	280	280	(330)	f
15	310	320	380	300	310	290	270	260	250	240	260	260	270	260	260	240	260	240	300	330	320	330	370	a
16	330	350	330	330	310	320	c	c	c	c	c	c	c	c	c	c	300	320	c	c	a	c	a	a
17	a	a	a	b	320	300	300	b	290	270	250	270	290	270	290	280	280	290	c	a	a	c	c	c
18	c	a	a	c	c	c	c	c	c	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	c	c	c	c	c	c	c	c	c	c	c	c	320	320
20	290	s	f	320	310	a	250	290	250	240	240	260	c	c	c	270	c	c	c	c	c	c	c	c
21																								
22																								
23																								
24																								
25									NO	RECORD		21st. - 30th.												
26																								
27																								
28																								
29																								
30																								
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	b
Median	(325)	(325)	(330)	310	310	(300)	280	(285)	(270)	250	250	255	(260)	(260)	(260)	(260)	(260)	275	*	(300)	(320)	(300)	(320)	*
No.	8	8	9	11	11	9	11	8	9	10	10	10	8	8	9	9	8	10		5	8	6	7	

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

HOURLY VALUES OF h'E OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

Hour / Day	08	09	10	11	12	13	14	15	16
1	b	b	100	100	b	b	b	b	b
2	c	c	c	c	c	c	c	c	c
3	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c
5	c	c	c	c	c	c	c	c	c
6	c	c	c	c	c	c	c	c	c
7	b	a	100	100	b	b	b	b	b
8	c	c	c	c	c	c	c	c	c
9	c	c	c	c	100	b	110	a	c
10	c	c	c	c	100	100	b	b	b
11	b	a	100	100	100	100	100	100	a
12	100	a	110	100	b	100	b	a	a
13	b	a	110	b	120	110	100	a	a
14	a	100	100	100	100	100	100	110	110
15	a	100h	100	b	b	100	b	b	b
16	c	c	c	c	c	c	c	c	a
17	b	100	100	110	100	110	a	100	a
18	c	c	c	c	c	c	c	c	c
19	c	c	c	c	c	c	c	c	c
20	100	100	c	c	c	c	c	c	c
21									
22									
23									
24									
25				NO RECORD 21st. - 30th.					
26									
27									
28									
29									
30									
31	c	c	c	c	c	c	c	c	c
Median	*	*	100	100	100	100	*	*	*
No.			8	6	6	7			

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF h'Es OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

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	100	100	100	100	120	100	100	b	b	100	100	100	b	b	b	b	b	100	c	b	b	120	b	100
2	100	100	100	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	100	100	100	100	100	100
3	90	90	100	100	100	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	100	100	100
5	100	100	100	100	100	100	130	e	100	100	100	b	c	c	c	c	c	c	c	140	110	120	110	100
6	100	100	100	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	100
7	100	100	100	100	100	100	100	e	100	100	g	100	b	110	b	120	100	e	c	b	150	120	100	110
8	120	110	e	e	100	100	160	e	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	100
9	100	100	e	e	e	c	c	c	c	c	c	c	120	b	g	100	c	100	120	c	c	110	100	100
10	90	90	90	c	c	c	c	c	c	c	c	c	100	g	b	b	b	b	120	150	130	120	120	140
11	100	150	150	150	e	e	e	120	b	100	110	g	100	110	120	g	100	e	c	c	c	c	c	c
12	c	100	100	100	100	100	e	e	100	100	g	100	b	g	b	110	100	110	c	e	e	e	b	e
13	100	100	100	120	110	100	100	e	100	100	g	b	g	g	g	130	110	e	e	c	150	120	110	100
14	100	100	100	100	100	e	e	100	100	120	120	140	110	g	g	g	110	e	c	e	e	120	130	120
15	100	100	100	110	100	100	100	e	100	g	150	b	b	g	b	b	100	e	e	130	130	110	100	100
16	90	100	100	100	100	100	c	c	c	c	c	c	c	c	c	c	140	120	c	c	100	100	c	100
17	100	100	100	b	100	100	100	b	b	g	140	130	g	g	110	g	100	e	c	100	100	c	c	c
18	c	100	100	c	c	c	c	c	c	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	c	c	c	c	c	c	c	c	c	c	c	c	120	110
20	100	s	s	e	s	100	100	e	g	g	c	c	c	c	c	c	c	c	c	c	c	c	c	c
21																								
22																								
23																								
24																								
25										NO	RECORD		21st. - 30th.											
26																								
27																								
28																								
29																								
30																								
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	100	b
Median	100	100	100	100	100	100	100	*	100	100	115	100	*	*	*	*	100	*	*	115	105	110	100	100
No.	16	17	15	10	11	10	8		6	7	6	5					8			6	10	14	14	14

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING JULY 1951 AT MACQUARIE ISLAND

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	3.1	3.1	3.2	3.0	3.2	3.2	3.1	b	b	3.5	3.5	3.6	b	b	b	b	b	3.5	c	b	3.1	2.8	b	a
2	a	a	a	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	a	a	a	a	a	a
3	a	a	a	a	a	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.9	2.9	a	a	a
5	a	a	a	a	a	a	3.0	3.3	3.2	3.3	3.6	3.5	c	c	c	c	c	c	c	3.2	3.0	a	3.3	a
6	a	a	2.9	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.2	3.4	2.8
7	3.1	a	2.9	3.1	3.2	3.4	3.4	3.3	3.4	3.5	3.5	3.5	3.5	3.4	3.4	3.6	3.4	3.4	c	b	3.0	a	f	f
8	3.0	2.9	3.0	3.0	a	3.0	3.3	3.3	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	2.9
9	2.8	2.9	2.9	2.8	3.0	c	c	c	c	c	c	c	b	b	3.3	3.3	c	3.0	3.1	c	c	3.0	a	n
10	f	2.8	3.0	c	c	c	c	c	c	c	c	c	3.4	3.5	3.2	b	b	b	2.9	2.8	3.0	3.0	3.0	3.2
11	2.9	f	2.8	2.8	2.9	3.0	3.1	b	3.2	3.6	3.4	3.5	3.3	3.4	3.4	3.4	3.5	3.2	c	c	c	c	c	c
12	c	a	a	2.8	3.1	3.2	3.3	3.1	3.2	3.5	3.4	3.5	3.3	3.4	3.5	3.5	(3.4)	3.0	c	3.3	3.2	3.1	b	2.9
13	f	a	3.0	3.1	3.0	a	3.2	3.2	3.4	3.4	3.5	3.2	3.4	3.3	3.1	(3.5)	3.3	3.2	3.1	c	2.8	3.1	(2.8)	3.1
14	2.9	3.0	3.1	3.1	3.1	3.1	3.2	3.1	3.5	3.6	3.7	3.5	3.6	3.5	3.5	3.5	3.4	3.2	c	3.2	3.2	3.2	(2.9)	f
15	2.9	3.0	2.8	3.2	3.1	3.3	3.2	3.0	3.5	3.6	3.4	3.4	3.4	3.3	3.5	3.5	3.3	3.3	2.9	2.9	3.0	3.0	2.9	a
16	3.0	3.0	2.9	3.0	3.1	3.2	c	c	c	c	c	c	c	c	c	c	3.1	3.0	c	c	a	c	a	a
17	a	a	a	b	3.0	3.1	3.2	b	3.3	3.4	3.6	3.4	3.4	3.3	3.3	3.2	3.2	3.2	c	a	a	c	c	c
18	c	a	a	c	c	c	c	c	c	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	c	c	c	c	c	c	c	c	c	c	c	c	3.0	2.9
20	3.2	s	f	3.1	3.2	a	3.3	3.1	3.5	3.5	3.5	3.5	c	c	c	3.2	c	c	c	c	c	c	c	c
21																								
22																								
23																								
24																								
25										NO	RECORD		21st. - 30th.											
26																								
27																								
28																								
29																								
30																								
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a	a	b
Median	(3.0)	(3.0)	2.9	3.0	3.1	(3.2)	3.2	(3.2)	(3.4)	3.5	3.5	3.5	(3.4)	(3.4)	(3.4)	(3.5)	(3.4)	3.2	*	(3.0)	(3.0)	(3.0)	(3.0)	(2.9)
No.	9	7	11	11	11	9	11	8	9	10	10	10	8	8	9	9	8	10		6	9	8	7	6

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF f°F2 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	b	a	b	b	b	b	b	b	b	3.4	3.8	4.0
2	c	c	c	c	c	c	c	c	c	c	c	c
3	2.8	a	a	a	b	b	b	2.1	3.5	3.9z	4.7	4.7
4	c	c	c	c	c	c	1.7	2.6	4.1	4.4	4.5	5.0
5	2.5f	2.7	a	a	2.2	2.1	b	2.5	4.2z	b	b	b
6	2.7f	2.3f	2.2f	2.3f	b	b	2.1f	2.3f	4.2	4.8z	5.4	5.9
7	2.0	3.0	b	a	f	3.4f	(3.0)f	3.0	4.5z	5.5z	5.8	6.5
8	3.1f	2.7f	2.6f	2.3f	2.1f	1.7f	1.8f	2.9	4.4	5.3	b	b
9	3.1f	f	a	b	1.5	1.5	b	2.8f	5.0	c	c	c
10	3.9	3.9	3.5f	3.2f	3.0f	2.7f	2.0f	2.8	4.9z	5.4	c	c
11	c	c	c	c	c	c	c	c	c	c	c	c
12	b	b	4.0	4.0	3.5	3.8	b	3.5	4.8	b	5.7	b
13	b	b	b	b	a	(3.1)s	b	b	4.1	b	b	b
14	b	b	b	b	b	c	c	c	c	c	c	c
15	a	b	c	b	b	2.3	2.3	3.0	4.4	5.1	5.0	5.5
16	3.1	3.5	3.6f	3.7f	b	b	b	3.8	4.8z	5.7z	5.9	6.7
17	f	f	4.0f	(4.0)f	3.6f	3.0f	2.1f	3.2	4.2	4.8	5.0	5.3
18	a	b	b	b	b	b	3.1	3.4	4.0	4.6	4.9	5.3
19	b	b	b	b	b	1.4	1.5	3.0	4.2	5.1	b	5.7
20	b	b	3.3f	b	b	b	b	3.7z	5.0	5.5	5.5	5.4
21	a	a	a	a	a	b	b	b	b	4.2	4.8	4.8
22	c	c	c	c	c	c	c	c	c	c	c	b
23	b	b	c	c	c	c	c	c	c	c	c	c
24	a	a	a	a	b	a	3.0f	b	4.0z	4.3z	b	b
25	b	b	b	f	2.5f	a	2.0	3.3	4.1z	4.6	5.4	5.4
26	c	c	c	c	c	c	c	c	c	c	c	c
27	b	c	c	c	c	c	c	c	c	c	b	5.0
28	a	a	a	b	b	3.0	a	c	c	c	c	c
29	a	a	a	2.4	f	f	2.2	3.6v	b	5.1	5.3	5.5
30	b	b	b	b	b	2.5	2.3	3.0z	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c
Median	(3.0)	(2.8)	(3.5)f	(3.2)f	(2.5)f	2.6	2.1	3.0	4.2	4.8	5.2	5.4
No.	8	6	7	7	7	12	13	18	18	17	14	15

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

HOURLY VALUES OF f°F2 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	b	4.9	b	5.1	3.8	3.2f	c	a	a	a	a	c
2	4.4	a	4.0	4.0	4.0	(2.4)f	c	a	a	a	a	c
3	5.1	5.5	b	5.8	4.9z	4.6	c	3.5	2.7	c	c	c
4	5.3	5.7	(5.7)p	6.0	(5.7)p	6.1	4.8	4.0	3.3	2.8	2.4	a
5	(5.9)p	7.2	b	b	b	b	4.9	c	2.6f	2.3z	f	f
6	b	c	c	c	c	c	c	3.8	3.3	2.7f	2.5f	2.3f
7	6.9	6.7	6.5j	7.7	c	7.1	5.7	4.7	a	a	a	3.3f
8	7.0	b	b	b	7.0	7.0	b	4.0	3.3f	f	2.8f	f
9	b	8.0	c	7.2	6.5j	(3.5)f	(3.8)f	4.2	(4.0)f	(3.8)f	a	a
10	c	7.3j	7.2	7.0j	7.0	6.0	5.0	c	c	c	c	c
11	c	c	c	c	c	c	c	4.4f	a	a	a	b
12	b	b	b	c	c	c	c	3.8f	a	b	a	a
13	6.5	5.8	5.7	5.2	c	b	c	b	a	a	a	a
14	c	c	c	c	5.3	5.2	4.4	4.3	c	b	a	a
15	5.7	6.0	b	6.0	6.3	4.0	b	4.2	4.0f	n	2.5	b
16	6.4	6.4	6.6	c	6.6	4.3	4.0	a	b	4.1f	b	4.7
17	5.5j	c	c	c	c	c	c	4.0	3.3	3.0	2.6	2.2
18	5.2	5.5	b	5.6	c	4.3	2.3f	c	a	a	b	b
19	b	6.4	b	7.1	c	5.7	5.5	a	a	a	b	b
20	5.3	6.2	b	c	b	a	a	c	c	c	a	a
21	5.2	b	5.8	5.3	5.0	a	a	b	a	b	c	c
22	b	b	5.5	b	a	a	a	a	a	a	b	b
23	c	c	c	c	c	c	c	3.3	a	a	a	a
24	b	5.0	5.2	b	3.8	3.4	c	3.4f	a	a	a	b
25	5.5	5.7	5.8	b	b	3.1f	3.2	f	c	c	c	c
26	c	c	c	c	c	c	c	b	b	b	b	b
27	5.0	5.0	5.0	5.5	4.8	c	c	c	3.9	a	a	a
28	5.3	5.3	5.1	5.2	5.2	b	4.4	3.0	3.6	3.5	b	b
29	b	c	c	c	c	c	c	3.3	3.5	a	a	b
30	c	c	6.4	5.9	6.1	c	5.9	c	c	c	c	c
31	c	c	c	c	5.9	5.6z	4.0	f	(3.2)f	(3.5)f	3.9f	a
Median	5.4	5.8	5.7	5.8	5.5	4.4	4.4	4.0	3.3	(3.2)	(2.6)	*
No.	16	17	13	15	16	16	13	15	12	8	6	

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

HOURLY VALUES OF foF1 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	09	10	11	12	13	14	15
1	b	3.5	3.6	b	3.7	3.6	b
2	c	c	c	3.6	a	3.5	a
3	q	3.6	3.7	3.7	3.7	b	q
4	q	q	q	3.9	3.9	3.6	q
5	b	b	b	4.0	q	b	b
6	q	3.7	4.0	b	c	c	c
7	q	q	q	4.0	q	q	q
8	q	3.7	b	4.1	1	s	b
9	q	q	3.6	b	4.5	q	q
10	q	3.8	1	3.9	1	3.7	q
11	c	c	c	c	c	c	c
12	b	1	b	b	b	b	b
13	b	b	4.0	4.0	3.9	4.0	3.5
14	c	c	c	c	c	c	c
15	b	3.5	4.0	4.2	4.0	b	q
16	q	3.7	4.0	4.1	4.0	q	c
17	q	3.4	3.8	4.0	c	c	c
18	q	q	3.9	3.9	4.0	b	3.5
19	3.3	b	3.8	4.0	4.0	s	q
20	1	3.7	1	4.0	4.0	3.8	c
21	b	3.7	4.0	4.1	b	3.7	3.5
22	c	c	b	b	b	3.9	b
23	c	c	c	c	c	c	c
24	q	b	b	b	4.0	3.9	b
25	q	3.7	4.0	4.1	4.2	4.0	b
26	c	c	c	c	c	c	c
27	c	b	b	4.0	4.0	4.0	3.7
28	c	c	c	4.0	4.0	3.8	3.7
29	3.7	4.0	4.0	b	4.2	c	c
30	c	c	c	c	c	4.0	3.5
31	c	c	c	c	c	c	c
Median	*	3.7	4.0	4.0	4.0	3.8	3.5
No.		12	13	18	15	13	6

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND foF1, AUGUST 1951

HOURLY VALUES OF foE OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1		e	b	b	b	b	b	b	b	e	
2		c	c	c	c	b	a	b	a	a	
3		1.8	2.2	2.5	b	2.7	2.6	b	b	a	
4		a	2.3	a	2.8	2.8	a	b	2.2	b	
5		1.9	b	b	b	2.8	2.7	b	b	b	
6		2.0	2.4	2.6	2.7	b	c	c	c	c	
7		1.8f	2.5h	2.6	3.0	2.9	2.9	2.7	2.3	c	
8		a	a	b	b	2.9	a	a	2.4	a	
9		a	a	a	a	b	a	a	2.5	2.1	
10		2.0	2.2	2.6	2.8	3.0	a	2.7	2.4	1.9	
11		c	c	c	c	c	c	c	c	c	
12		b	b	2.5	b	b	b	b	2.4	c	
13		b	b	b	b	b	b	2.6	b	c	
14		c	c	c	c	c	c	c	c	b	
15		a	b	2.6	b	2.8	b	b	b	b	
16		2.0	2.5	2.7	b	b	2.8	b	c	2.0	
17		2.1	a	a	b	b	c	c	c	c	
18		b	2.6	a	b	2.9	a	b	b	c	
19		2.0	2.4	f	a	2.9	2.9	2.6	a	a	
20		2.1	2.4	2.6	a	2.8	2.6	a	c	a	
21		b	b	2.6	2.7	a	b	a	a	a	
22		c	c	c	b	b	b	b	b	a	
23		c	c	c	c	c	c	c	c	c	
24		2.1	2.4	b	b	b	b	2.6	a	2.3	
25		a	2.5h	b	b	3.0	a	a	b	b	
26		c	c	c	c	c	c	c	c	c	
27		c	c	b	b	b	2.8	2.8	b	b	
28		c	c	c	c	2.9	b	b	2.4	b	
29	2.0	b	2.5	2.8	3.0	b	2.9	c	c	c	
30		c	c	c	c	c	c	2.8	2.7	b	
31		c	c	c	c	c	c	c	c	2.0	(1.6)f
Median	*	2.0	2.4	2.6	2.8	2.9	2.8	2.7	2.4	2.0	*
No.		11	12	10	6	12	8	7	8	6	

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

HOURLY VALUES OF fEs OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

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	7.5	b	b	b	b	b	b	4.4	b	b	b	b	b	b	4.1	3.5	1.8	c	4.0	5.8	6.0	6.5	c
2	c	c	c	c	c	c	c	c	c	c	c	c	b	4.0	b	3.2	3.4	2.2	c	4.4	5.9	7.0	6.7	c
3	6.0	4.8	4.1	3.9	2.0	b	3.5	e	g	g	g	b	g	g	b	b	2.2	e	c	1.6	3.5	c	c	c
4	c	c	c	c	c	c	e	e	2.5	g	4.8	3.4	3.1	4.1	b	2.7	b	e	e	e	e	2.5	3.5	5.3
5	3.5	6.7	4.6	4.0	2.0	2.3	4.6	3.4	g	b	b	b	2.9	3.1	b	b	b	b	e	c	2.7	4.1	4.2	3.1
6	4.0	3.4	2.3	2.5	b	4.2	3.5	f	2.8	2.5	3.4	2.8	b	c	c	c	c	c	c	e	e	e	e	e
7	4.2	4.8	4.8	4.8	3.9	2.9	2.8	2.1	g	g	4.0	g	3.1	g	g	3.0	c	2.3	2.1	2.1	3.9	5.5	5.3	2.8
8	4.4	4.1	4.4	1.7	4.0	3.1	2.2	2.5	2.8	2.6	2.8	b	g	2.9	2.9	g	2.8	e	b	e	3.4	3.4	1.9	5.0
9	4.0	1.7	2.8	1.9	1.7	e	b	2.0	2.0	2.8	3.0	3.4	b	3.2	2.8	g	g	3.5	4.7	4.8	2.3	4.4	5.3	5.2
10	5.3	4.0	2.1	3.2	2.6	1.5	2.8	e	g	g	g	g	g	3.1	2.8	g	g	e	e	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.9	5.2	4.8	4.7	b
12	b	4.4	4.1	2.7	4.0	4.0	2.8	2.3	b	b	g	b	b	b	b	g	c	c	c	3.2	d4.4	b	5.3	5.2
13	b	b	b	5.0	4.3	2.0	3.0	b	b	b	b	b	b	b	g	b	c	b	c	5.3	5.4	5.5	6.0	9.5
14	4.4	b	b	4.3	b	c	c	c	c	c	c	c	c	c	c	c	b	4.4	2.1	2.0	c	b	6.0	5.1
15	4.3	4.0	c	4.1	4.1	4.2	e	e	2.1	b	g	b	g	b	b	b	b	e	b	e	2.2	4.2	2.3	b
16	4.0	3.4	b	2.7	b	b	b	b	g	g	g	b	b	g	b	c	g	2.8	2.3	6.0	b	5.5	b	4.7
17	4.2	2.8	2.5	1.9	1.4	2.3	e	2.3	g	2.7	2.7	b	b	c	c	c	c	c	c	e	2.0	2.3	1.7	1.7
18	4.3	b	4.0	b	b	4.0	3.3	3.8	b	2.7	2.9	b	g	3.0	b	b	c	e	2.6	c	4.4	2.9	2.8	2.4
19	b	b	3.1	b	4.1	e	1.9	b	g	g	3.0	3.0	g	g	2.7	2.9	2.0	e	e	4.9	4.2	4.2	b	4.7
20	5.7	7.0	4.7	b	b	3.2	b	2.0	g	2.6	2.8	3.1	g	2.6	4.0	c	3.9	4.2	4.0	c	c	c	5.3	4.9
21	5.0	5.2	6.1	4.5	5.0	b	b	b	b	b	g	3.1	2.9	b	4.2	2.6	4.0	5.7	6.6	b	6.0	b	c	c
22	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	4.3	5.0	6.0	9.5	5.3	5.6	4.2	b	b
23	4.8	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	4.1	5.5	4.1	6.5	4.8
24	4.7	4.8	5.3	5.0	b	4.1	2.2	b	g	2.5	b	b	b	b	g	4.3	g	4.3	c	2.3	5.9	4.7	4.8	b
25	b	4.3	4.1	3.5	2.8	3.9	3.0	2.1	2.3	g	b	b	g	3.0	3.9	b	b	2.9	4.4	7.5	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	5.5	4.3
27	b	c	c	c	c	c	c	c	c	c	b	b	b	3.4	g	b	b	c	c	c	4.7	6.0	5.8	4.7
28	5.3	6.6	4.8	4.6	b	2.5	4.0	c	c	c	c	c	g	b	b	g	b	b	b	4.2	4.3	3.0	4.7	5.3
29	4.4	5.0	4.6	2.8	3.2	o	e	2.9	b	g	g	g	b	g	c	c	c	c	c	2.3	4.7	9.7	4.8	5.1
30	5.1	5.0	b	4.1	b	2.5	e	2.7	c	c	c	c	c	c	g	2.8	b	c	e	c	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.1	o	4.4	5.3	2.4	3.5	4.3	5.8
Median	4.4	4.8	4.1	3.9	3.6	2.7	2.8	2.1	**	**	2.8	3.0	**	3.0	2.8	2.8	2.2	2.2	2.3	3.9	4.4	4.2	4.8	4.8
No.	19	19	17	19	14	18	18	15	16	15	16	9	13	15	12	14	13	19	15	23	24	22	23	20

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

HOURLY VALUES OF h'F2 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

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	b	b	b	b	b	b	b	b	1	430	b	330	290	300	270	250	c	a	a	a	a	c
2	c	c	c	c	c	c	c	c	c	c	c	c	390	a	370	a	280	a	c	a	a	a	a	c
3	330	a	a	a	b	b	b	b	250	230	270	1	250	280	240	240	220	220	c	250	a	c	c	c
4	c	c	c	c	c	c	e	270	250	220	a	210	300	280	270	240	220	220	240	240	250	a	a	a
5	a	a	a	a	a	290	b	a	220	b	b	b	270	250	b	b	b	240	250	c	290	a	a	300
6	280	a	a	300	b	b	290	280	250	220	250	250	f	c	c	c	c	c	c	260	270	270	280	290
7	a	a	b	a	a	250	a	250	220	220	220	230	250	210	220	230	c	220	230	250	a	a	a	300
8	290	300	280	270	300	a	a	270	240	220	250	b	260	250	b	210	220	230	250	250	280	f	280	320
9	320	f	a	b	b	b	b	230	200	220	220	220	b	240	220	220	220	250	a	320	270	260	a	a
10	a	350	260	270	260	240	a	270	230	220	260	1	260	250	230	220	200	210	250	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	330	a	a	a	b
12	b	b	340	260	a	a	b	260	250	b	250	b	b	b	b	230	c	c	c	300	a	b	a	a
13	b	b	b	b	a	300	b	b	b	b	b	b	280	260	330	370	c	b	c	b	a	a	a	a
14	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	250	250	260	260	c	b	a	a
15	a	b	c	b	b	290	250	250	240	250	1	300	340	280	b	250	250	270	b	300	260	n	290	b
16	320	330	300	290	b	b	b	b	240	220	250	260	270	260	230	c	240	310	320	a	b	260	b	a
17	a	300	280	250	270	290	270	240	230	230	260	280	300	c	c	c	c	c	c	260	290	290	270	a
18	a	b	b	b	b	b	b	a	260	230	230	310	300	320	290	260	c	250	280	c	a	a	b	b
19	b	b	b	b	b	b	e	230	200	210	b	230	260	250	250	230	220	210	220	a	a	a	b	b
20	b	b	a	b	b	b	b	250	240	260	260	1	1	350	380	c	b	a	a	c	c	c	a	a
21	a	a	a	a	a	b	b	b	b	b	300	370	370	b	260	300	270	a	a	b	a	b	c	c
22	c	c	c	c	c	c	c	c	c	c	c	b	b	b	1	b	a	a	a	a	a	a	b	b
23	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	320	a	a	a	a
24	a	a	a	a	b	a	290	b	240	240	b	b	b	320	320	b	230	350	c	290	a	a	a	b
25	b	b	b	300	a	a	a	250	230	200	260	320	350	350	310	b	b	230	a	a	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b
27	b	c	c	c	c	c	c	c	c	c	b	b	300	320	320	300	b	c	c	c	a	a	a	a
28	a	a	a	b	b	b	a	c	c	c	c	c	330	300	300	300	b	b	b	350	320	290	b	b
29	a	a	a	a	350	f	280	260	b	290	280	300	b	c	c	c	c	c	c	290	a	a	a	b
30	b	b	b	b	b	b	e	250	c	c	c	c	c	c	240	240	220	c	220	c	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	230	230	a	a	290	300	340	a
Median	(320)	*	(280)	(270)	*	(290)	(290)	250	240	220	255	280	300	280	280	240	230	245	250	290	(280)	(280)	(280)	*
No.	5		5	7		6	8	14	17	16	14	13	17	18	18	16	15	16	10	15	9	6	5	

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

HOURLY VALUES OF hpF2 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

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	b	b	b	b	b	b	b	b	g	g	b	330	b	300	290	270	c	a	a	a	a	c
2	c	c	c	c	c	c	c	c	c	c	c	c	g	a	g	320	320	(390)	c	a	a	a	a	c
3	330	a	a	a	b	b	b	300	270	260	270	300	250	280	b	250	260	280	c	300	340	c	c	c
4	c	c	c	c	c	c	310	310	260	250	260	270	300	280	280	260	260	260	280	220	300	330	350	a
5	f	a	a	a	300	320	b	a	250	b	b	b	280	260	b	b	b	b	300	c	300	320	f	f
6	280	330	350	320	b	b	300	290	260	250	270	260	b	c	c	c	c	c	c	300	320	300	310	330
7	330	320	b	a	a	280	280	280	250	250	280	280	270	280	290	250	c	310	270	300	a	a	a	310
8	310	310	320	320	330	360	310	290	270	240	b	b	280	b	b	b	270	280	b	300	320	f	320	f
9	360	f	a	b	360	300	b	270	240	c	c	c	b	260	c	270	c	(250)	a	330	(300)	(270)	a	a
10	a	370	260	270	260	250	260	290	250	260	c	c	c	c	290	c	280	290	300	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	a	a	a	b
12	b	b	340	290	a	310	b	290	260	b	270	b	b	b	b	c	c	c	c	(360)	a	b	a	a
13	b	b	b	b	a	(320)	b	b	b	b	b	b	300	300	360	400	c	b	c	b	a	a	a	a
14	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	280	280	330	320	c	b	a	a
15	a	b	c	b	b	310	290	280	250	260	290	300	340	290	b	270	280	300	b	350	300	n	320	b
16	350	370	350	320	b	b	b	b	260	280	280	270	280	270	290	c	300	350	320	a	b	270	b	a
17	f	f	f	f	300	320	290	280	250	270	260	280	s	c	c	c	c	c	c	310	330	330	320	320
18	a	b	b	b	b	b	300	280	280	290	290	310	300	320	b	270	c	270	280	c	a	a	b	b
19	b	b	b	b	b	b	300	250	250	220	b	230	b	250	b	260	c	280	270	a	a	a	b	b
20	b	b	310	b	b	b	b	270	260	270	270	270	320	360	b	c	b	a	a	c	c	c	a	a
21	a	a	a	a	a	b	b	b	b	300	300	g	370	b	270	300	270	a	a	b	a	b	c	c
22	c	c	c	c	c	c	c	c	c	c	c	b	b	b	390	b	a	a	a	a	a	a	b	b
23	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	360	a	a	a	a
24	a	a	a	a	b	a	310	b	280	300	b	b	b	g	320	b	280	350	c	300	a	c	a	b
25	b	b	b	f	a	a	330	280	260	260	260	320	350	350	320	b	b	230	a	f	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b
27	b	c	c	c	c	c	c	c	c	c	b	b	300	320	320	300	260	c	c	c	360	a	a	a
28	a	a	a	b	b	340	a	c	c	c	c	c	330	300	300	300	300	b	300	380	330	310	b	b
29	a	a	a	a	f	f	300	270	b	290	280	300	b	c	c	c	c	c	c	310	270	a	a	b
30	b	b	b	b	b	b	290	270	c	c	c	c	c	c	260	290	270	c	290	c	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	260	280	370	f	330	(320)	360	a
Median	(330)	(330)	(330)	(320)	(300)	315	300	280	260	260	275	290	300	295	300	280	280	280	300	310	320	(315)	(320)	*
No.	6	5	6	5	5	10	13	16	17	16	14	14	15	16	13	14	15	16	11	15	12	8	6	

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

HOURLY VALUES OF h'F1 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	09	10	11	12	13	14	15
1	b	280	b	b	230	b	b
2	c	c	c	b	a	b	a
3	q	200	230	220	200	b	q
4	q	q	q	200	210	210	q
5	b	b	b	200	q	b	b
6	q	220	220	b	c	c	c
7	q	q	q	220	q	q	q
8	q	220	b	200	200	200	b
9	q	q	a	b	230	q	q
10	q	200	220	200	220	210	q
11	c	c	c	c	c	c	c
12	b	230	b	b	b	b	b
13	b	b	b	230	b	250	b
14	c	c	c	c	c	c	c
15	b	210	210	220	230	b	q
16	q	210	230	200	210	q	c
17	q	180	200	b	c	c	c
18	q	q	b	210	200	b	b
19	200	b	a	180	210	180	q
20	220	200	210	200	220	a	c
21	b	220	220	250	b	230	250
22	c	c	b	b	b	240	b
23	c	c	c	c	c	c	c
24	q	b	b	b	b	230	b
25	q	200	210	220	220	a	b
26	c	c	c	c	c	c	c
27	c	b	b	220	220	220	230
28	c	c	c	210	b	220	230
29	210	210	200	b	200	c	c
30	c	c	c	c	c	210	200
31	c	c	c	c	c	c	c
Median	*	210	215	210	215	220	*
No.		13	10	16	14	11	

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

HOURLY VALUES OF h'E OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1		e	b	b	b	b	b	b	b	e	
2		c	c	c	c	b	a	b	a	a	
3		b	120	110	b	100	110	b	b	a	
4		a	100	a	100	100	a	b	a	b	
5		b	b	b	b	100	100	b	b	b	
6		a	100	a	100	b	c	c	c	c	
7		100	100h	100	110	110	110	110	100	c	
8		a	a	b	b	110	a	a	110	a	
9		a	a	a	a	b	a	a	110	100	
10		100	b	b	110	110	a	110	110	110	
11		c	c	c	c	c	c	c	c	c	
12		b	b	100	b	b	b	b	100	c	
13		b	b	b	b	b	b	100	b	c	
14		c	c	c	c	c	c	c	c	b	
15		a	b	110	b	100	b	b	b	b	
16		100	100	100	110	b	110	110	c	b	
17		100	a	a	b	b	c	c	c	c	
18		b	b	a	b	100	a	b	b	c	
19		b	100	100	a	110	100	110	a	100	
20		110	100	100	a	110	100	a	c	a	
21		b	b	b	110	a	b	a	a	a	
22		c	c	c	b	b	b	b	b	a	
23		c	c	c	c	c	c	c	c	c	
24		100	100	b	b	b	b	110	a	110.	
25		a	100h	b	b	100	a	a	b	b	
26		c	c	c	c	c	c	c	c	c	
27		c	c	b	b	b	100	100	b	b	
28		c	c	c	c	100	b	b	110	b	
29	100	b	100	110	100	b	110	c	c	c	
30		c	c	c	c	c	c	100	100	b	
31		c	c	c	c	c	c	c	c	110	e
Median	*	100	100	100	110	100	105	110	110	110	*
No.		7	10	8	7	12	8	8	7	6	

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

HOURLY VALUES OF h'Es OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

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	100	b	b	b	b	b	b	100	b	b	b	a	b	b	100	120	120	c	110	100	100	100	c
2	c	c	c	c	c	c	c	c	c	c	c	c	b	100	b	120	120	120	c	100	100	100	100	c
3	110	100	100	100	100	b	100	e	g	g	g	b	g	g	b	b	100	e	c	140	120	c	c	c
4	c	c	c	c	c	c	e	e	100	g	100	100	120	100	b	100	b	e	e	e	e	110	110	100
5	100	100	100	100	100	110	100	100	g	b	b	b	120	120	b	b	b	b	e	c	120	120	120	120
6	120	110	110	140	b	100	110	100	100	140	110	130	b	c	c	c	c	c	c	e	e	e	e	e
7	110	100	100	100	100	100	100	100	g	g	100	g	110	g	g	100	c	100	100	100	110	100	100	110
8	110	100	100	100	100	100	100	110	100	120	b	b	g	110	110	g	110	e	b	e	140	140	130	110
9	110	120	100	100	110	e	b	110	120	110	110	110	b	120	110	g	g	120	110	100	130	130	100	100
10	100	100	100	100	100	130	100	e	g	g	g	g	g	110	110	g	g	e	e	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	100	100	100	b
12	b	100	100	100	100	100	100	100	b	b	g	b	b	b	b	g	c	c	c	130	100	b	110	100
13	b	b	b	100	100	110	100	b	b	b	b	b	b	b	g	b	c	b	c	100	110	100	100	100
14	100	b	b	100	b	c	c	c	c	c	c	c	c	c	c	c	b	110	120	130	c	b	100	100
15	100	100	c	100	100	110	e	e	100	b	g	b	g	b	b	b	b	e	b	e	120	120	110	b
16	150	130	b	100	b	b	b	b	g	g	g	b	b	g	b	c	g	130	110	100	b	100	b	100
17	100	100	100	100	110	100	e	100	g	100	100	b	b	c	c	c	c	c	c	e	100	100	100	110
18	100	b	100	b	b	100	100	100	b	150	100	b	g	100	b	b	c	e	150	c	100	120	110	110
19	b	b	100	b	110	e	150	b	g	g	110	100	g	g	120	110	140	e	e	110	100	100	b	100
20	100	100	100	b	b	100	b	110	g	110	100	100	g	120	110	c	100	100	100	c	c	c	100	100
21	100	100	100	100	100	b	b	b	b	b	g	120	110	b	110	120	150	100	100	b	100	b	c	c
22	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	100	100	100	100	100	100	100	b	b
23	100	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	100	100	100	100
24	100	100	100	110	b	100	110	b	g	110	b	b	b	b	g	100	g	100	c	100	100	100	100	b
25	b	100	100	100	100	100	100	100	100	g	b	b	g	100	100	b	b	140	100	120	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	100	100
27	b	c	c	c	c	c	c	c	c	c	b	b	b	140	g	b	b	c	c	c	100	100	100	100
28	100	100	100	100	b	100	100	c	c	c	c	c	g	b	b	g	b	b	b	120	120	110	100	100
29	100	100	100	100	100	e	e	100	b	g	g	g	b	g	c	c	c	c	c	140	100	100	100	100
30	100	100	b	100	b	100	e	100	c	c	c	c	c	c	g	140	b	c	e	c	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	170	g	100	100	130	100	100	100
Median	100	100	100	100	100	100	100	100	100	110	100	105	*	110	110	100	120	110	100	110	100	100	100	100
No.	19	19	17	19	14	15	13	12	7	7	8	6		10	7	9	9	11	10	18	22	21	22	19

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND h'Es. AUGUST 1951

HOURLY VALUES OF (M3000)F2 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

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	a	b	b	b	b	b	b	b	3.0	2.8	2.8	b	3.1	b	3.1	3.4	3.3	c	a	a	a	a	c
2	c	c	c	c	c	c	c	c	c	c	c	c	2.9	a	2.9	2.8	3.0	(2.6)	c	a	a	a	a	c
3	3.0	a	a	a	b	b	b	3.1	3.4	3.4	3.4	3.1	3.7	3.2	b	3.6	3.4	3.2	c	3.1	2.9	c	c	c
4	c	c	c	c	c	c	3.2	3.1	3.5	3.5	3.4	3.2	3.2	3.3	(3.3)	3.5	(3.4)	3.4	3.2	3.2	3.2	3.0	2.9	a
5	f	2.9	a	a	3.2	3.1	b	3.3	3.4	b	b	b	(3.4)	3.4	b	b	b	b	3.1	c	3.2	3.2	f	f
6	3.1	3.1	3.0	3.1	b	b	3.2	3.3	3.5	3.5	3.4	3.5	b	c	c	c	c	c	c	3.1	3.1	3.2	3.1	3.0
7	3.0	3.0	b	a	f	3.2	f	3.2	3.5	3.5	3.3	3.3	3.4	3.3	3.2	3.5	c	3.0	3.2	3.3	a	a	a	3.1
8	3.1	3.0	3.1	3.1	2.9	2.9	3.1	3.2	3.4	3.6	b	b	3.4	b	b	b	3.3	3.3	b	3.1	3.1	f	3.0	f
9	2.7	f	a	b	2.8	3.3	b	3.3	3.5	c	c	c	b	3.5	c	3.4	c	(2.9)	f	3.0	(3.0)	(3.2)	a	a
10	2.9	2.8	3.1	3.1	3.2	3.3	3.2	3.2	3.5	3.4	c	c	c	c	3.3	c	3.4	3.2	3.0	c	c	c	c	c
11	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.8	a	a	a	b
12	b	b	3.0	3.2	3.1	2.9	b	3.3	3.3	b	3.4	b	b	b	b	c	c	c	c	(2.8)	a	b	a	a
13	b	b	b	b	a	(3.0)	b	b	3.3	b	b	b	3.2	3.3	2.9	2.7	c	b	c	b	a	a	a	a
14	b	b	b	b	b	c	c	c	c	c	c	c	c	c	c	c	3.2	3.2	3.0	3.1	c	b	a	a
15	a	b	c	b	b	3.1	3.0	3.2	3.5	3.4	3.2	3.3	2.9	3.1	b	3.2	3.2	3.0	b	2.9	3.1	n	2.9	b
16	2.9	2.7	2.8	3.0	b	b	b	3.2	3.4	3.3	3.2	3.4	3.3	3.3	3.2	c	3.1	2.9	2.8	a	b	3.1	b	3.0
17	f	f	f	f	3.1	3.0	3.2	3.3	3.5	3.4	3.4	3.3	s	c	c	c	c	c	c	3.1	3.0	3.1	3.0	2.9
18	a	b	b	b	b	b	3.1	3.3	3.4	3.2	3.2	3.1	3.2	3.2	b	3.5	c	3.2	3.0	c	a	a	b	b
19	b	b	b	b	b	3.1	3.2	3.5	3.6	3.7	b	3.7	b	3.6	b	3.4	c	3.2	3.3	a	a	a	b	b
20	b	b	3.0	b	b	b	b	3.2	3.5	3.3	3.5	3.2	3.2	2.9	b	c	b	a	a	c	c	c	a	a
21	a	a	a	a	a	b	b	b	b	3.2	3.2	2.9	2.9	b	3.3	3.2	3.2	a	a	b	a	b	c	c
22	c	c	c	c	c	c	c	c	c	c	c	b	b	b	2.6	b	a	a	a	a	a	a	b	b
23	b	b	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.9	a	a	a	a
24	a	a	a	a	b	a	3.0	b	3.3	3.2	b	b	b	3.1	3.1	b	3.3	3.0	c	3.1	a	a	a	b
25	b	b	b	f	a	a	3.0	3.2	3.4	3.4	3.5	3.2	3.1	3.0	3.0	b	b	3.5	2.8	f	c	c	c	c
26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	b	b	b
27	b	c	c	c	c	c	c	c	c	c	b	3.1	3.1	3.2	3.2	3.1	3.5	c	c	c	2.8	a	a	a
28	a	a	a	b	b	2.9	a	c	c	c	c	c	3.1	3.3	3.2	3.1	3.2	b	3.1	2.7	2.8	3.0	b	b
29	a	a	a	2.9	f	f	3.0	3.4	b	3.4	3.4	3.3	b	c	c	c	c	c	c	3.2	3.3	a	a	b
30	b	b	b	b	b	3.1	3.2	3.4	c	c	c	c	c	c	3.4	3.4	3.4	c	3.3	c	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.2	2.9	f	3.0	3.1	2.8	a
Median	(3.0)	(3.0)	(3.0)	(3.1)	(3.1)	3.1	3.2	3.2	3.4	3.4	3.4	3.2	3.2	3.2	3.2	3.3	3.3	3.2	3.0	3.1	3.0	(3.1)	(3.0)	*
No.	7	6	6	6	6	12	12	18	18	17	14	15	15	16	13	14	15	16	12	15	12	8	6	

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

HOURLY VALUES OF (M3000)F1 OBSERVED DURING AUGUST 1951 AT MACQUARIE ISLAND

Hour / Day	09	10	11	12	13	14	15
1	b	3.2	3.3	b	3.5	b	b
2	c	c	c	3.5	a	3.6	a
3	q	3.7	3.6	1	1	b	q
4	q	q	q	3.7	3.6	3.8	q
5	b	b	b	1	q	b	b
6	q	1	1	b	c	c	c
7	q	q	q	1	q	q	q
8	q	1	b	1	1	s	b
9	q	q	1	b	1	q	q
10	q	3.8	1	3.9	1	1	q
11	c	c	c	c	c	c	c
12	b	1	b	b	b	b	b
13	b	b	3.9	3.5	3.8	3.5	b
14	c	c	c	c	c	c	c
15	b	4.1	3.8	3.6	3.7	b	q
16	q	1	3.8	3.7	3.8	q	c
17	q	4.2	3.8	3.7	c	c	c
18	q	q	b	3.7	3.6	b	b
19	1	b	1	3.8	3.8	s	q
20	1	3.9	1	3.7	3.5	a	c
21	b	3.6	3.6	3.5	b	3.7	3.6
22	c	c	b	b	b	3.5	b
23	c	c	c	c	c	c	c
24	q	b	b	b	3.7	3.6	b
25	q	3.9	3.7	3.7	3.5	a	b
26	c	c	c	c	c	c	c
27	c	b	b	3.6	3.6	3.5	3.6
28	c	c	c	3.5	3.6	3.7	3.7
29	3.6	3.7	3.7	b	3.8	c	c
30	c	c	c	c	c	3.8	1
31	c	c	c	c	c	c	c
Median	*	3.8	3.7	3.7	3.6	3.6	*
No.		9	9	14	13	9	

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

HOURLY VALUES OF foF2 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	a	c	c	c	c	c	c	c	c	c	c	5.4
2	2.3	1.9	1.8	1.8	1.7	1.6	2.4	4.2	5.2	5.0	6.2.	6.4v
3	2.5	a	c	c	1.7	b	2.8	4.2z	c	5.9	5.7	6.4
4	c	c	c	c	c	2.1z	2.7z	4.3z	5.0	6.2	n	6.8
5	2.5f	2.0f	1.9f	1.8f	1.7f	1.7f	2.6f	4.3z	4.8	5.5	6.1	6.5
6	c	c	c	c	c	c	c	c	c	5.5	5.8	6.4
7	a	a	a	a	1.4	1.3	2.3f	3.4	3.9z	4.2z	4.8z	5.3
8	a	3.6f	3.3f	2.8f	2.3f	2.3	2.8	b	4.8	5.5z	5.8	5.9
9	3.0	c	c	c	c	c	c	c	c	c	c	c
10	c	c	a	4.3f	3.8f	f	c	c	c	c	c	c
11	3.5f	c	c	a	a	b	3.2	4.0z	c	c	c	c
12	a	a	a	b	b	b	c	b	3.7	b	b	6.0
13	b	b	b	a	a	2.0	3.4	4.3z	5.3	5.8	6.1	b
14	c	2.1f	b	b	b	b	b	b	b	4.6	b	5.1
15	b	b	b	b	b	b	3.3	4.2z	4.5z	c	c	c
16	a	b	b	b	b	b	3.8f	4.1z	4.4	4.5	4.7	4.8
17	c	b	a	b	b	b	b	4.1	b	b	b	b
18	b	b	b	b	b	b	3.6	4.2	4.3	b	5.2	b
19	2.5	2.3	a	b	b	b	3.4	4.2	4.4	5.0	5.4	5.4
20	b	b	b	b	b	b	b	b	b	b	b	b
21	b	c	b	c	c	c	c	c	c	c	c	b
22	b	b	b	b	b	b	b	b	b	b	b	c
23	c	c	c	c	c	b	b	g	g	4.2	b	5.0
24	b	b	b	b	2.0	2.1	3.3z	4.0z	b	b	4.7	b
25	b	b	b	b	2.7f	2.7f	3.6	4.1z	4.5	5.0	5.0	5.2
26	c	c	c	c	b	b	b	2.8	3.3	b	b	5.0
27	c	c	b	c	c	c	c	c	c	c	c	c
28	b	b	b	b	b	b	b	b	b	c	4.2	4.3
29	b	b	1.5	1.4	1.4	2.5	3.6	4.1z	4.6	5.0	5.2	5.6
30	c	c	c	c	c	c	c	c	c	c	4.7	4.5
Median	(2.5)	(2.1)f	*	(1.8)f	(1.7)	(2.1)	3.3	4.1	4.5	5.0	5.2	5.4
No.	6	5		5	9	9	15	17	15	14	15	18

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

HOURLY VALUES OF f°F2 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	5.5	5.5	6.0	5.8	5.3z	5.5	5.3	4.6z	4.1	3.6	3.1	2.6
2	6.4	7.0v	6.4	6.8	6.5z	7.0	6.4	5.7	4.6	c	3.4	3.0
3	c	7.3	6.8	c	7.0	(6.0)p	3.4	3.3f	4.7f	4.1	a	a
4	6.8	7.3	6.9	6.8	(7.9)p	6.7	6.5	5.5	5.0	4.2	3.5	2.9f
5	6.6	6.5	7.0	6.1	6.7	6.1	c	4.8	3.5f	f	f	c
6	b	c	c	c	c	c	a	a	a	a	a	a
7	5.4	5.6	5.8	(5.8)	6.0	c	5.5	5.0z	4.3	3.9f	a	a
8	6.5	6.7	6.4	6.9	6.8	5.8	4.4	4.0	3.3	3.4	3.2f	3.1
9	c	c	c	c	6.2	6.1	5.9	4.9	a	a	a	a
10	c	c	c	c	c	a	a	a	c	c	c	3.8f
11	5.6	5.4	5.8	c	c	c	c	a	4.3	c	c	c
12	6.8	6.6	c	5.5	a	5.2	a	a	a	3.6	3.9	c
13	9.4	8.5f	7.1	c	c	a	a	a	a	a	a	a
14	4.9	5.3	5.8	5.2	a	a	a	a	a	a	b	a
15	c	b	b	5.9	5.6	5.0	4.7	4.2	a	3.8	f	a
16	5.2	c	c	4.9	a	a	a	a	c	c	b	c
17	b	6.0	5.7	4.2	f	4.3	4.0	a	a	b	b	b
18	5.2	5.8	7.0	5.3	5.7	4.7	4.6	4.2	b	a	2.9	2.7
19	5.8	5.9	6.3	6.3	5.8	6.3	a	a	a	a	b	b
20	b	b	b	b	b	b	b	b	b	b	b	b
21	b	b	5.8	b	b	b	b	b	c	b	b	b
22	c	c	c	c	c	c	c	b	b	b	b	c
23	b	b	5.3	5.2	4.6	b	b	b	b	b	b	b
24	b	5.9	5.5z	(5.0)b	b	5.5	(4.7)a	c	3.7	b	b	b
25	5.2	5.1	5.0	5.2v	5.2	4.1	b	3.8	b	b	b	b
26	b	b	b	b	a	3.5	a	a	a	a	c	c
27	6.5	8.0	8.3	6.5	c	c	c	b	b	b	b	b
28	4.7	c	c	c	c	c	c	4.0	3.5	3.1	2.7	2.4
29	5.7	5.6	5.9	5.8	5.7	5.7	5.4	4.2	c	c	c	c
30	4.8	b	4.7	5.0	5.2	5.3	5.0	4.1	a	a	3.5	3.0
Median	5.6	6.0	6.0	5.8	5.8	5.5	5.0	4.2	4.2	(3.7)	(3.3)	(3.0)
No.	18	18	20	19	15	17	13	14	10	8	8	8

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF foF1 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1		c	c	c	4.0	4.1	4.1	4.1	3.7	b	
2		1	b	3.7	4.2	4.1	4.1	3.9	3.5	q	
3		c	4.1	4.1	4.2	c	4.2	4.0	c	3.1	
4		q	3.9	n	4.2	4.3	4.3	4.1	4.1	q	
5		q	1	4.2	4.3	4.2	4.3	4.0	q	q	
6		c	4.2	4.5	4.4	b	c	c	c	c	
7		q	q	4.2	4.2	4.3	4.2	4.1	3.9	1	
8		q	1	4.2	4.2	4.3	4.2	4.2	4.0	3.4	
9		c	c	c	c	c	c	c	c	q	
10		c	c	c	c	c	c	c	c	c	
11		c	c	c	c	4.2	4.2	4.1	4.0	c	
12		q	b	b	4.5	4.5	4.5	4.0	4.1	a	
13		3.9	4.0	4.2	b	4.4	4.3	4.2	c	c	
14		b	4.0	b	b	4.2z	4.1	4.1	4.1	a	
15		1	c	c	c	c	b	b	4.0	3.7	
16		q	4.2z	4.2	4.2	4.3	c	c	4.1	a	
17		b	b	b	b	b	4.2	4.3	a	q	
18		b	b	4.2	b	4.2	4.1	4.0	4.0	3.5	
19		q	4.2	4.2	4.2	4.3	4.2	4.2h	4.0	1	2.7
20		h	b	3.9	4.4	4.2	4.1	4.0	b	b	
21		c	c	c	b	b	b	4.2	b	b	
22		b	b	b	c	c	c	c	c	c	
23	3.7	3.8	3.9	b	4.1	4.2	4.0	4.0	3.9	a	
24		b	4.1	4.1	b	b	4.1	4.0	3.9	b	
25		1	4.1	4.2	4.2	4.3	4.2	4.2	4.0	3.6	1
26		q	q	q	4.0	b	b	b	b	a	
27		c	c	c	c	4.4	4.2	b	4.0	c	
28		b	c	4.0	4.1	4.1h	c	c	c	c	
29		4.1	4.1	4.3	4.3	4.4	4.2	4.2	4.2	3.7	
30		c	c	4.1	4.2	4.2	4.3	4.1	4.2	3.8	3.5
Median	*	*	4.1	4.2	4.2	4.2	4.2	4.1	4.0	3.6	*
No.			11	16	18	20	21	21	18	7	

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

HOURLY VALUES OF f°E OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17
1	c	c	•	c	c	b	b	3.0	2.8	2.5	b	b
2	e	1.8	2.3	b	b	3.1	3.0	3.0	2.9	b	2.2	1.8
3	e	2.0	c	a	b	a	3.2	3.2	a	a	2.2	1.7
4	e	1.9h	2.5	2.8	3.1	3.2	3.2	3.1	3.0	a	2.3	1.8
5	e	2.0h	2.3	2.8	3.0	a	3.1	3.1	a	2.7	2.2	a
6	c	c	c	2.8	3.0	b	b	c	c	c	c	c
7	1.5	2.0	2.5	2.6	a	3.0	3.1	3.1	2.9	2.8	2.3	c
8	e	b	2.5	2.6	3.0	3.1	3.1	3.0	2.9	2.7z	2.3z	2.0
9	c	c	c	c	c	c	c	c	c	c	2.2	2.1
10	c	c	c	c	c	c	c	c	c	c	c	c
11	e	2.1	c	c	c	c	c	c	c	c	c	c
12	c	b	b	b	b	b	a	a	3.0	b	a	a
13	e	2.1	2.5	2.7	3.0	b	b	3.1	3.0	a	a	e
14	b	b	b	b	b	b	3.1	3.1	2.8	a	a	a
15	b	b	a	c	c	c	c	b	b	2.7	2.5h	2.0
16	a	a	2.7	a	a	a	b	c	c	a	a	a
17	b	b	b	b	b	b	b	b	b	a	b	a
18	b	b	b	b	b	b	b	b	b	b	2.5	a
19	b	b	b	3.0	3.1	b	b	3.1	3.0	2.8	2.4	2.2
20	b	b	b	b	b	b	b	b	b	b	b	b
21	c	c	c	c	c	b	b	b	b	b	b	b
22	b	b	b	b	b	c	c	c	c	c	c	c
23	b	b	b	b	b	b	b	b	b	a	a	a
24	b	2.2	b	b	b	b	b	b	2.9	b	a	a
25	b	b	b	2.9	3.0	b	b	3.2	3.0	a	2.5	2.2
26	b	b	2.5	b	b	3.2	b	b	b	b	a	a
27	c	c	c	c	c	c	3.2	b	b	2.7	c	c
28	b	b	b	c	3.1	a	3.1	c	c	c	c	c
29	1.9	2.4	b	b	3.2	3.3	b	b	3.1	b	b	2.1
30	c	c	c	c	b	3.2	b	b	b	3.2	a	a
Median	e	2.0	2.5	2.8	3.0	3.2	3.1	3.1	3.0	2.7	2.3	2.0
No.	9	9	8	8	9	7	9	11	12	8	11	10

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

HOURLY VALUES OF fEs OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

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	5.2	c	c	c	c	c	c	c	c	c	c	b	b	g	g	g	b	b	1.8	2.3	e	e	1.9	4.0
2	3.9	2.1	1.4	e	e	e	g	g	g	b	b	3.5	g	g	g	b	g	2.0	e	e	e	c	e	5.4
3	2.5	5.9	c	c	3.5	b	g	g	c	3.4	b	3.3	g	3.5	3.0	2.3	g	g	2.3	3.1	3.3	5.0	4.3	6.5
4	c	c	c	c	c	1.7	g	2.1	2.6	2.8	g	g	g	g	4.0	3.5	2.5	1.9	2.3	1.9	e	5.2	4.0	5.2
5	4.0	4.0	4.0	e	e	4.0	g	g	g	g	3.5	4.3	g	g	4.0	3.5	2.9	3.5	c	2.0	3.1	3.5	4.8	c
6	c	c	c	c	c	c	c	c	c	3.1	3.5	b	b	c	c	c	c	c	4.0	5.5	4.8	7.5	5.3	5.4
7	5.5	4.7	4.5	3.5	e	e	g	2.1	2.8	2.9	3.1	3.3	3.3	g	3.4	3.3	2.6	c	c	e	e	2.6	4.5	4.8
8	6.2	4.4	4.5	3.6	1.4	3.9	4.2	b	2.7	3.0	3.3	4.3	g	g	3.1	g	g	g	2.6	3.0	e	e	e	e
9	4.6	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.7	2.5	e	3.2	5.2	8.0	5.2	4.8
10	c	c	7.0	5.5	4.1	2.9	c	c	c	c	c	c	c	c	c	c	c	6.3	9.3	5.2	c	c	c	7.0
11	7.5	c	c	5.2	7.3	b	2.1	g	c	c	c	c	c	c	c	c	c	c	c	4.8	3.0	c	c	c
12	5.0	6.3	5.7	6.9	5.1	b	c	b	b	b	b	b	3.3	3.6	3.5	3.5	5.3	5.6	5.5	4.8	8.5	4.7	5.8	c
13	b	b	b	5.5	4.0	1.9	2.4	g	g	g	g	b	b	g	g	3.1	4.3	4.1	6.5	5.7	5.4	5.2	4.3	7.2
14	c	7.0	b	b	b	b	b	b	b	b	b	b	g	g	g	3.9	5.7z	5.5	5.0	5.1	5.4	4.2	b	4.0
15	b	3.2	b	4.5	b	4.2	4.7	2.7	2.6	c	c	c	c	b	b	g	g	4.7	5.7	4.9	4.8	4.8	8.8	d4.4
16	5.5	b	b	b	5.9	5.0	3.9	4.3	3.1	3.4	3.2	3.1	b	c	c	3.5	7.2	4.3	4.7	5.9	c	c	b	c
17	c	b	4.1	b	b	b	b	b	b	b	b	b	b	b	b	3.7	b	3.3	4.4	4.0	4.9	b	b	b
18	b	6.8	b	b	b	b	b	b	3.5	b	b	b	b	b	b	b	g	3.5	2.8	5.7	5.4	4.4	4.2	3.5
19	3.3	4.4	4.3	4.2	4.7	b	b	b	b	g	g	b	b	g	g	g	g	g	5.2	5.2	6.7	6.6	5.5	b
20	b	4.5	7.0	b	b	b	b	b	b	b	b	b	b	b	b	b	5.3	b	7.0	5.0	4.6	5.2	4.5	b
21	b	c	8.6	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	5.2	b	c	b	b	b
22	7.4	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	9.2	5.3	b	b	c
23	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b	3.1	3.9	7.7	4.3	b	4.4	4.3	b	b
24	5.0	b	b	3.5	2.8	e	b	g	b	b	b	b	b	b	3.0	b	4.2	4.0	5.2	c	4.6	b	4.3	b
25	b	b	4.5	b	2.5	2.3	b	b	b	b	g	b	b	b	g	2.9	b	b	b	4.4	4.8	7.8	b	4.5
26	c	c	c	c	b	b	b	b	g	b	b	4.8	b	b	b	b	4.7	4.0	5.1	4.8	4.3	5.2	c	c
27	c	c	b	c	c	c	c	c	c	c	c	c	g	b	b	2.8	c	c	c	5.3	5.2	7.7	b	5.5
28	b	b	b	b	b	b	b	b	b	c	g	3.2	g	c	c	c	c	c	c	6.1	4.0	2.8	3.3	2.8
29	b	b	b	e	e	e	g	g	b	b	g	g	b	b	b	b	b	g	3.5	4.9	c	c	c	c
30	c	c	c	c	c	c	c	c	c	c	b	g	b	b	b	g	3.6	5.0	4.1	4.2	5.3	4.8	7.0	3.5
Median	5.0	4.5	4.5	3.9	3.2	2.1	**	**	2.6	2.9	**	3.3	**	**	3.0	3.1	2.9	3.8	4.4	4.8	4.7	4.8	4.4	4.8
No.	13	11	11	12	14	12	11	11	10	9	11	11	10	11	13	17	19	20	23	27	26	21	18	17

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

HOURLY VALUES OF h'F2 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	320	320	340	270	270	220	230	240	230	250	250	280	290
2	a	a	300	b	b	b	280	220	240	220	270	300	270	260	250	250	240	230	220	230	240	c	260	a
3	a	a	c	c	a	b	270	240	c	260	260	270	c	250	260	c	230	220	a	300	250	a	a	a
4	c	c	c	c	c	230	260	220	210	240	n	250	280	270	270	1	220	220	230	240	230	260	260	270
5	300	310	280o	270o	270o	280o	260	230	200	1	270	260	290	280	270	220	240	230	c	260	310	300	290	c
6	c	c	c	c	c	c	c	c	c	310	1	310	b	c	c	c	c	c	a	a	a	a	a	a
7	a	a	a	a	o	o	320	260	240	220	400	350	350	310	300	280	240	c	230	240	270	300	a	a
8	a	330	280	270	300	a	300	b	240	280	290	270	260	270	260	270	250	250	250	260	250	290	290	270
9	270	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	230	220	230	230	a	a	a	a
10	c	c	a	300	260	260	c	c	c	c	c	c	c	c	c	c	c	a	a	a	c	c	c	a
11	a	c	c	a	a	b	260	250	c	c	c	c	300	350	330	c	c	c	c	a	330	c	c	c
12	a	a	a	b	b	b	c	b	280	b	b	300	300	330	350	370	a	a	a	a	a	a	320	c
13	b	b	b	a	a	280	260	240	300	330	320	b	290	280	280	c	c	a	a	a	a	a	a	a
14	c	300	b	b	b	b	b	b	b	450	b	b	450	370	350	330	a	a	a	a	a	a	b	a
15	b	b	b	b	b	b	300	260	300	c	c	c	c	b	b	300	350	250	a	a	a	a	a	a
16	a	b	b	b	b	b	a	a	250	1	450	500	450	c	c	400	a	a	a	a	c	c	b	c
17	c	b	a	b	b	b	b	b	b	b	b	b	b	370	300	a	250	300	320	a	a	b	b	b
18	b	b	b	b	b	b	280	260	230	b	360	b	430	390	350	350	270	240	260	a	b	a	a	a
19	350	a	a	b	b	b	b	260	230	370	340	320	310	310	290	300	1	280	a	a	a	a	b	b
20	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
21	b	c	b	c	c	c	c	c	c	c	c	b	b	b	370	b	b	b	b	b	c	b	b	b
22	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	b	b	b	c
23	c	c	c	c	c	b	b	g	g	510	b	380	b	b	400	380	270	b	b	b	b	b	b	b
24	b	b	b	b	b	300	260	240	b	b	450	b	b	350	400	b	b	270	a	c	a	b	b	b
25	b	b	b	b	b	300	260	260	1	360	400	420	370	420	380	330	450	340	b	a	b	b	b	b
26	c	c	c	c	b	b	b	270	220	b	b	560	b	b	b	b	a	560	a	a	a	a	c	c
27	c	c	b	c	c	c	c	c	c	c	c	c	320	310	400	360	c	c	c	b	b	b	b	b
28	b	b	b	b	b	b	b	b	b	c	760	630	470	c	c	c	c	c	c	290	320	a	a	a
29	b	b	b	e	e	280	250	210	370	310	380	350	350	340	310	300	280	240	270	370	c	c	c	c
30	c	c	c	c	c	c	c	c	c	c	550	600	440	b	450	370	350	360	250	380	a	a	a	320
Median	*	*	*	*	(300)	(280)	260	250	240	310	370	320	320	320	310	315	250	245	245	260	(250)	(290)	(285)	*
No.					5	8	13	15	14	12	14	17	18	18	21	16	15	16	10	11	9	5	6	

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

HOURLY VALUES OF hpF2 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	320	320	340	280	280	270	270	290	290	310	300	330	340
2	350	340	330	330	320	300	330	250	240	250	270	300	280	270	290	280	280	260	270	300	300	c	330	340
3	330	a	c	c	a	b	350	260	c	270	260	290	c	260	290	c	250	270	370	310	290	330	a	a
4	c	c	c	c	c	270	300	250	310	250	n	270	290	290	290	320	260	250	280	290	300	300	310	340
5	330	330	340	290	320	320	300	250	270	300	270	260	300	290	300	280	260	260	c	310	350	f	f	c
6	c	c	c	c	c	c	c	c	c	310	300	320	b	c	c	c	c	c	a	a	a	a	a	a
7	a	a	a	a	370	e	340	290	270	260	g	350	350	310	310	(290)	270	c	280	310	330	350	a	a
8	a	340	320	310	320	a	310	b	270	290	290	270	270	280	280	290	280	280	280	270	290	320	320	320
9	320	e	c	c	c	c	c	c	c	c	c	c	c	c	c	c	280	260	270	290	a	a	a	a
10	c	c	a	300	260	f	c	c	c	c	c	c	c	c	c	c	c	a	a	a	c	c	c	400
11	f	c	c	a	a	b	290	270	c	c	c	c	300	350	330	c	c	c	c	a	370	c	c	c
12	a	a	a	b	b	b	c	b	280	b	b	300	320	330	c	370	a	a	a	a	a	a	340	c
13	b	b	b	a	a	300	270	270	300	340	330	b	330	290	300	c	c	a	a	a	a	a	a	a
14	c	320	b	b	b	b	b	b	b	g	b	b	g	g	350	330	a	a	a	a	a	a	b	a
15	b	b	b	b	b	b	310	290	300	c	c	c	c	b	b	310	370	280	a	a	a	a	a	a
16	a	b	b	b	b	b	320	300	300	g	g	g	g	c	c	g	a	a	a	a	c	c	b	c
17	c	b	a	b	b	b	b	320	b	b	b	b	b	370	300	a	f	320	330	a	a	b	b	b
18	b	b	b	b	b	b	290	280	280	b	g	b	g	390	360	350	280	270	260	300	b	a	a	390
19	350	320	a	b	b	b	b	290	270	g	g	320	310	310	300	300	310	350	a	a	a	a	b	b
20	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
21	b	c	b	c	c	c	c	c	c	c	c	b	b	b	370	b	b	b	b	b	c	b	b	b
22	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	b	b	b	c
23	c	c	c	c	c	b	b	g	g	g	b	g	b	b	400	380	270	b	b	b	b	b	b	b
24	b	b	b	b	b	330	280	310	b	b	g	b	b	350	400	b	b	270	a	c	300	b	b	b
25	b	b	b	b	320	310	270	300	g	g	g	g	g	g	g	330	450	340	b	a	b	b	b	b
26	c	c	c	c	b	b	b	300	220	b	b	g	b	b	b	b	a	a	a	a	a	a	c	c
27	c	c	b	c	c	c	c	c	c	c	c	c	350	330	430	360	c	c	c	b	b	b	b	b
28	b	b	b	b	b	b	b	b	b	c	g	g	g	c	c	c	c	c	c	330	350	360	a	360
29	b	b	b	350	b	330	270	260	g	g	g	350	350	340	310	310	290	300	320	370	c	c	c	c
30	c	c	c	c	c	c	c	c	c	c	g	g	g	b	g	370	350	370	260	390	a	a	460	330
Median	(330)	(330)	*	(310)	(320)	(315)	300	290	280	325	g	320	340	330	320	320	280	270	280	305	305	(325)	(330)	(340)
No.	5	5		5	6	8	14	17	15	14	15	17	18	18	20	17	15	15	11	12	10	6	6	8

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

HOURLY VALUES OF h'F1 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16	17
1		c	c	c	b	180	210	220	200	b	
2		230	b	b	200	180	200	200	200	q	
3		c	220	210	180	c	220	200	c	200	
4		q	220	n	220	200	190	200	220	q	
5		q	200	220	200	210	210	200	q	q	
6		c	200	210	230	b	c	c	c	c	
7		q	q	220	200	220	220	210	220	230	
8		q	210	210	220	220	200	200	200	220	
9		c	c	c	c	c	c	c	c	q	
10		c	c	c	c	c	c	c	c	c	
11		c	c	c	c	220	220	c	230	c	
12		q	b	b	b	220	220	270	270	a	
13		240	220	230	b	b	220	220	290	c	
14		b	240	b	b	210	230	220	a	a	
15		230	c	c	c	c	b	b	220	230	
16		q	240	230	210	220	c	c	240	a	
17		b	b	b	b	b	240	220	a	q	
18		b	b	b	b	230	b	b	s	230	
19		q	200	220	220	210	200	200h	200	220	270
20		b	b	b	b	b	b	b	b	b	
21		c	c	c	b	b	b	b	b	b	
22		b	b	b	c	c	c	c	c	c	
23	250	b	250	b	200	240	b	b	250	a	
24		b	220	230	b	b	200	210	230	b	
25		250	210	220	220	210	200	210	220	220	280
26		q	q	q	240	b	b	b	b	a	
27		c	c	c	c	220	220	b	220	c	
28		b	c	210	220	210h	c	c	c	c	
29		200	180	200	210	b	190	220	220	220	
30		c	c	220	220	220	210	210	220	230	a
Median	*	230	220	220	220	220	210	210	220	220	*
No.		5	13	13	15	17	18	16	17	9	

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

HOURLY VALUES OF h'E OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17
1	c	c	c	c	c	b	b	110	100	100	b	b
2	e	100	100	b	b	b	110	110	b	b	110	b
3	e	b	c	a	b	a	100	100	a	a	100	140
4	e	100 h	100	100	100	100	100	100	100	a	a	100
5	e	110h	110	100	100	a	110	100	a	a	a	a
6	c	c	c	110	110	b	b	c	c	c	c	c
7	140	100	110	100	a	100	a	110	100	100	100	c
8	e	b	a	100	100	100	100	100	100	100	110	b
9	c	c	c	c	c	c	c	c	c	c	120	130
10	c	c	c	c	c	c	c	c	c	c	c	c
11	e	100	c	c	c	c	c	c	c	c	c	c
12	c	b	b	b	b	b	a	a	110	b	a	a
13	e	100	b	100	100	b	b	100	100	a	a	o
14	b	b	b	b	b	b	100	100	b	a	a	a
15	b	b	a	c	c	c	c	b	b	100	100h	120
16	a	a	a	a	a	a	b	c	b	a	a	a
17	b	b	b	b	b	b	b	b	b	a	b	a
18	b	b	b	b	b	b	b	b	b	b	b	a
19	b	b	b	100	110	b	b	110	100	100	100	130
20	b	b	b	b	b	b	b	b	b	b	b	b
21	c	c	c	c	c	b	b	b	b	b	b	b
22	b	b	b	b	b	c	c	c	c	c	c	c
23	b	b	b	b	b	b	b	b	b	a	a	a
24	b	100	b	b	b	b	b	b	100	h	a	a
25	b	b	b	b	b	b	b	b	b	a	b	b
26	b	b	100	b	b	110	b	b	b	h	a	a
27	c	c	c	c	c	c	100	b	b	110	c	c
28	b	b	b	c	100	a	100	c	c	c	c	c
29	b	100	b	b	100	100	b	b	b	b	b	120
30	c	c	c	c	b	100	b	b	b	110	a	a
Median	e	100	100	100	100	100	100	100	100	100	100	130
No.	8	8	5	7	8	6	8	10	8	7	7	7

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

HOURLY VALUES OF h'Es OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

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	100	c	c	c	c	c	c	c	c	c	c	b	b	g	g	g	b	b	110	100	e	e	110	100
2	100	100	100	e	e	e	g	g	g	b	b	120	g	g	g	b	g	120	e	e	e	c	e	100
3	100	100	c	c	100	b	g	g	c	110	b	110	g	120	120	110	g	g	100	150	140	100	110	100
4	c	c	c	c	c	120	g	100	100	100	g	g	g	g	120	100	100	100	100	100	e	100	100	100
5	100	180	100	e	e	100	g	g	g	g	130	100	g	g	110	110	110	100	c	180	150	130	120	c
6	c	c	c	c	c	c	c	c	c	120	120	b	b	c	c	c	c	c	120	110	110	100	100	110
7	100	100	100	110	e	e	g	100	110	110	100	130	110	g	120	120	110	c	c	e	e	150	110	110
8	100	100	100	100	100	100	100	b	100	120	120	100	g	g	120	g	g	g	150	150	e	e	e	e
9	100	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	130	150	e	140	100	100	100	110
10	c	c	100	100	110	120	c	c	c	c	c	c	c	c	c	c	c	100	100	100	c	c	c	100
11	100	c	c	100	100	b	100	g	c	c	c	c	c	c	c	c	c	c	c	100	100	c	c	c
12	100	100	110	100	100	b	c	b	b	b	b	b	110	140	150	100	100	100	100	100	100	100	100	c
13	b	b	b	100	100	110	100	g	g	g	g	b	b	g	g	100	100	100	100	110	100	100	120	100
14	c	110	b	b	b	b	b	b	b	b	b	b	g	g	g	100	100	100	100	110	100	100	b	100
15	b	100	b	100	b	100	100	100	100	c	c	c	c	b	b	g	g	150	100	100	100	100	100	100
16	100	b	b	b	100	100	100	100	110	110	100	100	b	c	c	110	100	100	100	100	c	c	b	c
17	c	b	100	b	b	b	b	b	b	b	b	b	b	b	b	100	b	100	110	100	100	b	b	b
18	b	110	b	b	b	b	b	b	100	b	b	b	b	b	b	b	g	120	110	100	100	100	100	100
19	100	100	100	100	100	b	b	b	b	g	g	b	b	g	g	g	g	g	100	100	100	100	100	b
20	b	100	120	b	b	b	b	b	b	b	b	b	b	b	b	b	100	b	150	100	100	100	120	b
21	b	c	100	c	c	c	c	c	c	c	c	b	b	b	b	b	b	b	100	b	c	b	b	b
22	120	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	100	100	b	b	c
23	c	c	c	c	c	b	b	b	b	b	b	b	b	b	b	100	110	110	100	b	100	100	b	b
24	100	b	b	100	110	e	b	g	b	b	b	b	b	b	130	b	100	100	100	c	100	b	100	b
25	b	b	100	b	b	110	b	b	b	b	g	b	b	b	g	110	b	b	b	100	100	100	b	100
26	c	c	c	c	b	b	b	b	g	b	b	120	b	b	b	b	100	110	110	110	130	100	c	c
27	c	c	b	c	c	c	c	c	c	c	c	c	g	b	b	120	c	c	c	120	120	100	b	100
28	b	b	b	b	b	b	b	b	b	c	g	100	g	c	c	c	c	c	c	100	100	100	100	100
29	b	b	b	e	e	e	g	g	b	b	g	g	b	b	b	b	b	g	150	120	c	c	c	c
30	c	c	c	c	c	c	c	c	c	c	b	g	b	b	b	g	110	110	110	100	110	110	100	110
Median	100	100	100	100	100	105	100	*	100	110	120	105	*	*	120	105	100	100	100	100	100	100	100	100
No.	13	11	11	9	9	8	5		6	6	5	8			7	12	13	16	21	25	21	19	16	16

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

HOURLY VALUES OF (M3000)F2 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	3.3	3.2	3.0	3.2	3.3	3.3	3.3	3.2	3.2	3.1	3.1	3.0	2.9
2	2.9	2.9	3.0	3.0	3.0	3.1	2.9	3.4	3.7	3.4	3.5	3.2	3.2	3.5	3.2	3.3	3.4	3.4	3.3	3.2	3.0	c	3.0	3.0
3	3.0	a	c	c	3.0	b	2.8	3.5	c	3.5	3.6	3.2	c	3.4	3.2	c	3.5	3.3	2.7	2.9	3.1	3.1	a	a
4	c	c	c	c	c	3.2	3.2	3.4	3.0	3.6	n	3.4	3.3	3.2	3.2	3.0	3.3	3.5	3.2	3.0	3.1	3.1	3.0	2.9
5	2.8	2.8	2.9	3.0	3.1	3.1	3.1	3.5	3.4	3.3	3.3	3.4	3.2	3.2	3.1	3.1	3.5	3.4	c	3.1	2.8	f	f	c
6	c	c	c	c	c	c	c	c	c	3.2	3.2	3.0	b	c	c	c	c	c	a	a	a	a	a	a
7	a	a	a	a	2.8	2.8	2.9	3.2	3.2	3.3	2.9	3.1	3.1	3.3	3.1	(3.4)	3.3	c	3.4	3.1	3.1	2.9	a	a
8	a	2.8	2.8	3.0	3.0	a	3.1	b	3.4	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.2	3.1	3.2	3.2	3.1	3.0	3.0	3.0
9	3.0	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.3	3.2	3.1	a	a	a	a
10	c	c	a	3.1	3.2	f	c	c	c	c	c	c	c	c	c	c	c	a	a	a	c	c	c	2.8
11	f	c	c	a	a	b	3.0	3.4	c	c	c	c	3.3	3.0	3.0	c	c	c	c	a	2.8	c	c	c
12	a	a	a	b	b	b	c	b	3.3	b	b	3.1	3.1	3.1	c	2.9	a	3.0	a	a	a	3.3	3.0	c
13	b	b	b	a	a	3.2	3.2	3.3	3.2	3.0	3.0	b	2.9	3.1	3.1	c	c	a	a	a	a	a	a	a
14	c	2.9	b	b	b	b	b	b	b	2.7	b	2.9	2.6	2.9	2.9	3.1	a	a	a	a	a	a	b	a
15	b	b	b	b	b	b	3.2	3.3	3.2	c	c	c	c	b	b	3.0	3.2	3.1	a	a	a	a	f	a
16	a	b	b	b	b	b	3.0	3.2	3.1	2.6	2.7	2.5	2.6	c	c	2.9	a	a	a	a	c	c	b	c
17	c	b	a	b	b	b	b	3.1	b	b	b	b	b	2.8	3.3	a	f	3.1	3.0	a	a	b	b	b
18	b	b	b	b	b	b	3.1	3.3	3.1	b	3.0	b	2.7	2.9	2.8	2.9	3.2	3.2	3.2	3.2	b	a	a	2.7
19	2.8	2.8	a	b	b	b	b	3.3	3.1	3.0	3.1	3.1	3.2	3.2	3.2	3.1	3.1	2.9	a	a	a	a	b	b
20	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b
21	b	c	b	c	c	c	c	c	c	c	c	b	b	b	2.9	b	b	b	b	b	c	b	b	b
22	b	b	b	b	b	b	b	b	b	b	b	c	c	c	c	c	c	c	c	b	b	b	b	c
23	c	c	c	c	c	b	b	g	g	2.6	b	2.9	b	b	2.9	2.7	2.9	b	b	b	b	b	b	b
24	b	b	b	b	b	3.0	3.4	3.1	b	b	2.7	b	b	3.0	3.7	b	b	3.3	a	c	3.1	b	b	b
25	b	b	b	b	3.0	3.1	3.4	3.0	3.0	3.0	2.8	2.7	3.0	2.8	2.8	3.0	2.6	2.9	b	2.6	b	b	b	b
26	c	c	c	c	b	b	b	3.1	3.7	b	b	2.2	b	b	b	b	a	2.3	a	a	a	a	c	c
27	c	c	b	c	c	c	c	c	c	c	c	c	2.9	2.9	2.5	2.8	c	c	c	b	b	b	b	b
28	b	b	b	b	b	b	b	b	b	c	2.1	2.2	2.6	c	c	c	c	c	c	3.0	2.9	2.9	2.9	2.7
29	b	b	2.8	3.0	2.9	2.8	3.3	3.3	2.9	3.3	2.9	3.1	3.0	3.1	3.2	3.1	3.1	3.2	3.0	2.8	c	c	c	c
30	c	c	c	c	c	c	c	c	c	c	2.5	2.3	2.7	b	2.7	2.8	3.0	2.8	3.4	2.6	a	a	2.5	3.0
Median	(2.9)	(2.8)	*	(3.0)	(3.0)	(3.1)	3.1	3.3	3.2	3.2	3.0	3.1	3.0	3.1	3.1	3.0	3.2	3.2	3.2	3.1	3.1	(3.1)	(3.0)	(2.9)
No.	5	5		5	8	8	14	17	15	14	15	18	18	18	20	17	15	17	11	13	10	7	7	8

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

HOURLY VALUES OF (M3000)F1 OBSERVED DURING SEPTEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	07	08	09	10	11	12	13	14	15	16
1		c	c	c	b	3.8	3.8	3.7	3.8	b
2		1	b	b	3.8	3.8	3.9	4.0	4.0	q
3		c	1	4.0	3.7	c	3.8	3.9	c	1
4		q	1	n	4.0	3.7	3.8	3.9	1	q
5		q	1	3.9	3.9	3.8	3.8	3.9	q	q
6		c	3.7	3.6	3.5	b	c	c	c	c
7		q	q	3.6	3.6	3.5	3.7	3.7	1	1
8		q	1	3.8	3.9	4.0	3.8	3.8	3.7	1
9		c	c	c	c	c	c	c	c	q
10		c	c	c	c	c	c	c	c	c
11		c	c	c	c	3.6	3.7	3.6	3.6	c
12		q	b	b	3.6	3.7	3.5	3.5	3.6	a
13		1	3.5	3.6	b	3.7	3.8	3.7	c	c
14		b	3.5	b	b	3.6	3.5	3.6	3.4	a
15		1	1	c	c	c	b	b	f	3.6
16		q	3.4	3.6	3.8	3.7	c	c	3.5	a
17		b	b	b	b	b	3.6	3.7	a	q
18		b	b	3.4	b	3.6	b	b	3.4	3.7
19		q	3.5	3.5	3.7	3.7	3.7	3.7	3.6	1
20		b	b	3.7	3.6	3.7	3.5	3.5	b	b
21		c	c	c	b	b	b	b	b	b
22		b	b	b	c	c	c	c	c	c
23	3.2	3.3	3.4	b	3.6	3.6	b	b	3.4	a
24		b	3.5	3.7	b	b	3.9	3.7	3.6	b
25		1	3.5	3.7	3.7	3.6	3.7	3.6	3.7	3.6
26		q	q	q	3.4	b	b	b	b	a
27		c	c	c	c	3.5	3.7	b	3.5	c
28		b	c	3.8	3.6	3.6	c	c	c	c
29		3.5	3.8	3.8	3.7	3.6	3.7	3.8	3.7	1
30		c	c	3.7	3.6	3.8	3.6	3.7	3.5	3.5
Median	*	*	3.5	3.7	3.7	3.7	3.7	3.7	3.6	*
No.			9	15	17	20	19	18	15	

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

HOURLY VALUES OF f°F2 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	2.6	a	2.4	2.3	1.9	2.4	3.8	4.3z	4.7	4.8z	5.0z	5.2
2	2.6	2.3	c	c	1.8	2.4	c	c	5.2	5.2	5.3	5.8
3	2.5	2.0	b	c	c	c	c	c	c	c	c	c
4	f	3.0	2.9	2.6	2.3	2.8	3.9z	c	5.3	5.5	c	c
5	3.2	2.8f	2.3f	2.2f	1.9	2.7	3.9	4.7	4.8	5.2	5.6	6.2
6	2.5f	2.1f	1.9f	1.8f	1.9f	2.8f	4.0z	4.7z	4.9	5.3	5.3	5.8
7	3.2f	2.7f	2.5f	2.1f	2.0f	c	c	c	c	c	c	5.8
8	a	a	f	c	b	4.2	a	b	g	g	5.1	5.5
9	b	b	b	b	b	3.2	b	4.4	4.5	g	g	b
10	c	c	c	c	c	c	c	c	c	c	c	c
11	b	b	b	b	b	3.8	4.2	4.5	4.8	5.2	5.3	5.2
12	b	b	b	b	b	b	4.2	4.8	4.9	5.2	5.2	5.2
13	3.8f	a	3.8f	3.5f	3.5f	3.8z	4.8z	5.7	5.9	6.4	6.5	6.5
14	b	3.9	5.3	4.0	3.3f	3.6	4.4z	5.2	5.4	5.8	6.0	b
15	3.8	3.2	a	b	3.1f	3.8	4.0	b	b	5.4	5.5	6.0
16	5.2f	(4.5)f	(3.5)f	3.0f	3.0f	3.8f	4.5	5.3	5.7	5.9	6.0	6.5
17	b	a	b	b	b	3.9	b	b	4.8	4.8	5.3	5.8
18	b	b	b	b	b	3.2	b	b	b	b	b	c
19	b	b	b	4.2	b	4.0	4.3	4.5	b	b	c	c
20	b	4.4	4.2	b	b	b	4.1	b	b	b	c	b
21	b	3.9	2.6f	f	2.8f	3.8	4.3z	c	c	c	c	c
22	a	a	3.6	3.0	3.0	3.8	4.4z	c	c	c	c	6.3
23	a	a	b	b	b	b	4.4	4.9	c	c	5.5	c
24	c	c	c	c	3.2	3.9	4.8	5.2	5.2	5.5p	c	c
25	3.3	3.3	2.4	b	2.4	3.5	4.4	5.2	5.8	c	c	c
26	3.6f	3.2	3.2	2.6	2.9	4.1z	4.9j	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c
28	a	a	3.0f	2.7f	2.8f	3.8f	4.2v	4.8	4.8	5.4	5.5	5.7
29	b	b	b	b	b	b	3.5	b	b	b	b	b
30	c	c	3.0f	2.8f	3.3f	4.5z	c	5.8	c	c	c	6.0
31	3.9	3.8f	3.8f	s	s	4.0	4.8	5.0	5.8z	6.0z	6.6z	7.0
Median	3.2	3.2	3.0f	2.7f	2.8f	3.8	4.3	4.8	4.9	5.3	5.4	5.8
No.	12	14	16	13	17	23	21	16	17	17	16	16

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

HOURLY VALUES OF foF2 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	5.7	5.6z	5.6z	5.6	5.8z	5.8z	5.8z	5.8	5.4	c	c	3.1
2	5.3	c	5.7	5.7	5.5	a	c	a	4.7	3.8	3.4	3.0
3	c	c	c	5.6z	5.4z	c	5.8	5.8	5.0	4.3	3.2	a
4	6.5	6.5	6.4	6.5	6.5	6.4	c	6.1	5.7	5.0	4.5	3.9z
5	6.4	6.2	6.3	6.4	6.4	6.2	c	6.3	5.8	4.9	4.0f	3.5f
6	5.8	6.0	6.2	6.0z	6.1	5.8	c	5.9	5.3	4.6	4.0	3.4
7	6.0	6.2	6.1	6.3	6.4	6.7	6.5	f	4.7	c	f	f
8	6.2	7.0	b	7.1	5.4	c	a	b	(3.8)f	a	b	4.0
9	b	5.4	5.4	5.5	5.3	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	5.0	b	b	b
11	5.6	6.2	5.9	5.9	6.0	a	c	c	c	b	b	b
12	5.3	5.8	5.8	6.0	6.2	6.6	7.0	a	a	a	a	b
13	6.4	6.1	5.8	6.1	6.4	8.1	6.5	5.5	4.7	a	c	b
14	6.3p	6.3	5.8	5.8	5.9	5.7	6.4p	4.9	a	4.5	4.7	4.3f
15	6.1	6.7	6.7	7.1	6.7	b	6.8	5.9f	4.8	4.5	a	(5.0)f
16	6.8	7.0	7.2	7.2	7.0	a	5.5	4.8	a	b	4.5	b
17	5.6	5.9	8.9	6.9	a	a	c	a	a	b	a	a
18	c	c	5.6	c	5.7	c	c	c	4.3	c	b	b
19	c	c	c	(6.1)p	5.8p	a	c	b	b	a	a	b
20	b	c	c	5.7p	6.1	5.6	c	4.2	a	b	a	a
21	c	c	c	c	n	c	c	c	4.2	a	a	4.5
22	6.3	c	c	c	c	c	c	5.7	4.2	a	b	a
23	c	c	c	6.1	6.5p	6.5p	5.3	5.2	5.4	c	c	a
24	c	c	c	c	c	c	c	6.3p	5.7	4.7	c	4.3
25	c	c	c	c	c	c	c	c	c	c	4.9	4.3
26	c	c	c	c	c	c	c	c	c	c	c	c
27	c	c	c	c	c	c	5.8p	c	c	c	3.5	3.7
28	c	6.0	c	c	c	c	c	c	c	a	a	b
29	b	c	c	c	5.5	5.5	5.6	5.7p	c	c	c	c
30	c	c	c	c	7.0	7.6	7.7	7.5	5.4	a	a	4.2
31	7.1	6.9	7.0	7.2	7.0	7.0	7.6	7.7	7.5	6.7	s	5.2
Median	6.2	6.2	6.0	6.1	6.1	6.4	6.4	5.8	5.0	(4.6)	(4.0)	4.1
No.	16	16	16	20	22	13	13	16	18	9	9	14

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND foF2, OCTOBER 1951

HOURLY VALUES OF foF1 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17
1		q	4.0	4.2z	4.3z	4.3	4.1	4.3	4.2	4.1	1	q
2		c	4.1	4.1	4.2	4.3h	4.3	c	4.3	4.1	4.0	a
3		c	c	c	c	c	c	c	c	4.0	1	c
4		c	4.1	4.3	c	c	4.4	4.3	4.3	3.8	3.8	q
5		b	4.1	4.3	4.3	4.5z	4.5	4.4	4.3	4.2	3.9	q
6		q	4.2	4.2	4.4	4.3	4.5	4.4h	4.3	4.2	4.0	q
7		c	c	c	c	4.4h	4.3	4.4	4.3	4.2	3.7	q
8		b	4.0	3.8	4.2	4.2	4.3	4.4	a	a	a	c
9		b	b	4.2	4.2	b	b	4.3	4.2	4.0	3.9	c
10		c	c	c	c	c	c	c	c	c	c	c
11		q	4.0	4.2	4.3	4.4	4.4	4.4	4.2	4.0	3.9	a
12		3.6	4.1	4.2	4.4	4.5	4.4	4.4	4.4	4.2	4.0	3.3
13		3.9	4.4	4.4	4.6	4.7	4.6	4.5	1	4.3	4.0	3.5
14		4.2	4.2	4.4	4.5	b	4.5	4.5	4.6	4.2	1	q
15		b	b	4.4	4.4	4.5	4.5	4.5	4.4	4.2	1	b
16		1	4.2	4.4	4.5	4.6	4.6	4.6	4.5	4.3	4.2	a
17		b	4.2	4.2	4.3	4.5h	4.3	4.4	a	a	a	a
18		b	b	4.3	4.5	4.5	4.5	b	b	4.1	4.2	a
19		4.0	b	b	4.4	4.5	c	4.4	c	4.1	4.1	a
20		b	b	b	4.2	b	b	4.4	4.5	4.2	4.1	q
21		4.1	4.1	4.4	4.4	4.5	4.5	4.5	4.4	4.3	n	3.5
22		1	4.2	4.3	4.4	4.5	4.5	4.5	4.3	b	3.9	3.5
23	3.6	4.1	4.1	4.3	4.4h	4.4	4.4h	4.3	4.3	4.2	4.0	3.6
24		4.0	4.3	4.2	4.4	4.4	4.5h	4.3	4.6	4.3	c	c
25		4.0	4.2	4.5	4.6	c	4.4	4.4	4.3	4.2	4.0	q
26		4.2	4.3	4.5	c	4.5	c	4.5	4.6	4.4	4.1	q
27		c	c	c	c	c	c	c	c	c	c	c
28		3.9	4.1z	4.3	4.5	4.5	4.5	4.4h	4.3	4.4	4.1	c
29		b	b	b	b	b	b	4.2	4.2	4.3	4.0	1
30		4.2	4.4	4.5	4.5h	4.7	c	c	c	c	4.2	4.0
31	3.8	4.2	4.5z	4.6	4.7	4.8h	4.6h	4.6	4.5	4.5	4.2	q
Median	*	4.0	4.2	4.3	4.4	4.5	4.5	4.4	4.3	4.2	4.0	3.5
No.		12	21	24	24	22	22	25	22	25	21	6

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

HOURLY VALUES OF foE OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	e	2.1	2.4	2.8	2.8	3.1z	3.2z	3.2	a	3.0z	3.0	2.5z	2.2	1.5	
2	e	c	c	2.9	3.0	3.1	3.2	3.2	c	b	b	2.6	a	c	
3	c	c	c	c	c	c	c	c	c	c	2.8h	2.4	a	a	
4	1.4	1.9	c	2.6	3.0	c	c	3.2	3.2	3.0	2.7	2.6	2.2	c	
5	e	1.9	b	2.7	2.9	3.1	3.2z	a	3.2	3.2	2.9	2.5	2.2	c	
6	e	1.9	a	2.8	2.9	3.1	3.1	3.2	3.2	3.1	2.9	2.5	2.1	c	
7	c	c	c	c	c	c	3.2	3.1	a	3.0	2.8	2.6	a	a	
8	e	c	b	a	b	b	a	3.3	a	a	a	a	c	a	
9	b	b	b	b	3.1	3.1	b	b	b	3.0	3.0	a	c	c	
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
11	b	b	2.6	b	b	b	b	b	b	b	3.1	2.6	a	c	
12	b	b	2.6	2.8	3.1	3.1	3.2	b	3.2	3.1	2.9	2.6	2.5	a	
13	1.8	2.2	2.6	2.9	3.1	3.2	3.3z	3.3	3.2	3.1	b	a	2.1	a	
14	e	2.2	b	3.0	3.1	b	b	b	b	b	3.0	a	a	a	
15	e	c	b	b	3.1	3.2	3.3	3.2	3.2	b	a	b	b	c	
16	e	2.3	2.6	2.9	3.1	3.3	3.3	3.3	a	3.1	b	2.7	a	b	
17	b	b	b	3.0	3.1	b	b	3.2	a	a	a	a	a	c	
18	b	b	b	b	b	b	b	3.3	b	b	b	a	a	c	
19	b	b	2.8	b	b	b	3.3	b	a	b	3.1	3.0	a	c	
20	b	b	b	b	b	a	b	b	a	b	3.2	2.7	a	c	
21	b	2.3	b	b	a	a	a	3.2	3.3	3.1	b	b	a	a	
22	e	b	2.7	2.9	3.1	3.2	3.2	3.2	3.2	b	b	2.8	2.5	2.2	
23	b	b	2.8	2.9	3.1	3.2	3.2	3.2	b	b	3.1	2.9	2.4f	a	
24	b	2.5	2.6	2.9h	3.1	3.1	b	3.3	3.2	3.1	3.0	c	c	a	
25	1.7	a	2.6	2.9	3.1	3.1	a	a	3.4	3.3	3.1	2.8	2.5	a	
26	1.9	2.4	2.8	3.0	3.2	a	3.3	a	a	3.1	3.0	2.8	2.5	a	
27	c	c	c	c	c	c	c	c	c	c	c	c	c	b	
28	1.9	2.3	2.7h	3.0	3.1	3.2	3.2	3.3	a	3.3h	3.1	b	c	c	
29	b	b	b	b	b	b	b	b	b	3.1	3.0	2.8	b	a	
30	1.8	2.4	2.8	3.0	3.2	3.3	3.3	c	c	c	c	2.7f	2.5f	a	
31	2.0	2.4	s	s	3.2	3.3	3.3	3.3	3.3	3.2	s	s	2.5	b	1.6
Median	e	2.3	2.6	2.9	3.1	3.2	3.2	3.2	3.2	3.1	3.0	2.6	2.4	*	*
No.	16	13	13	17	20	16	16	17	11	16	18	18	12		

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND foE, OCTOBER 1951

HOURLY VALUES OF fEs OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

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	4.0	4.7	3.5	2.3	e	2.2	2.9	2.7	g	g	g	g	4.4	3.2	g	g	3.3	2.8	g	1.8	e	c	c	6.7
2	4.0	2.3	c	c	e	g	c	c	g	g	g	g	g	c	b	b	2.9	3.8	c	5.3	4.9	4.3	3.9	3.9
3	e	1.6	1.7	c	c	c	c	c	c	c	c	c	c	c	c	g	g	c	1.8	1.9	e	e	5.7	4.8
4	6.0	3.0	3.0	1.8	e	g	g	c	2.8	g	c	c	g	g	g	g	g	g	c	e	e	e	e	e
5	e	e	e	e	e	g	g	b	g	3.1	g	g	3.2	g	g	g	g	g	c	e	e	e	e	e
6	e	2.7	2.1	e	e	g	g	2.5	3.5	3.2	g	3.3	g	g	g	3.1	b	g	c	e	e	e	e	e
7	e	e	3.3	e	e	c	c	c	c	c	c	g	3.2	3.3	g	g	2.8	4.1	3.0	3.5	5.0	c	5.7	5.4
8	6.3	5.1	5.7	c	5.2	6.8	6.4	b	4.1	b	b	3.5	3.9	5.3	7.0	6.8	5.8	c	8.9	5.3	9.5	6.0	5.3	b
9	4.8	b	5.0	b	b	b	b	b	b	g	g	b	b	b	g	g	3.5	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.6	b	b	b
11	6.3	4.2	5.1	b	b	b	b	2.8	b	b	b	b	b	b	b	g	2.8	6.0	c	c	c	4.3	b	b
12	4.7	b	b	b	b	b	b	g	3.2	3.8	3.4	3.5	g	g	g	3.0	g	4.0	5.0	5.6	7.5	4.8	7.3	4.2
13	3.6	5.3	5.6	4.0	4.2	g	g	2.7	g	3.9	3.8	g	3.5	3.3	4.0	b	3.0	3.3	2.8	3.6	6.0	7.6	c	5.7
14	4.3	3.9	b	b	3.0	2.7	g	b	g	g	b	b	b	b	b	g	3.5	2.7	4.3	5.3	5.0	4.0	2.9	2.0
15	1.7	2.3	4.7	b	3.3	g	3.9	b	b	g	g	g	g	g	b	3.2	b	b	g	2.2	2.1	4.4	5.2	3.9
16	3.0	2.1	2.1	2.3	2.8	2.0	g	3.0	3.0	g	g	3.5	g	4.2	3.3	b	3.5	4.3	b	5.1	8.0	b	6.7	b
17	5.4	6.0	6.0	4.4	6.0	b	b	b	3.1	g	b	b	4.0	5.2	5.8	4.4	7.0	5.2	c	5.5	4.4	b	4.5	4.4
18	b	b	5.0	b	b	b	b	b	b	b	b	b	g	b	3.6	b	3.5	d4.4	c	c	d4.4	4.5	b	b
19	b	b	b	4.2	b	b	b	g	b	b	b	g	b	3.5	b	3.5	3.8	d4.4	c	b	b	d4.4	d4.4	b
20	4.2	4.2	4.3	b	b	b	b	b	b	b	3.3	b	b	3.8	3.8	3.5	3.1	4.4	e	4.3	4.2	b	d4.4	d4.4
21	b	3.5	2.1	2.3	e	b	2.5	b	b	3.3	3.5	4.3	3.9	g	3.3	b	b	3.3	4.0	c	4.4	5.5	4.8	d4.4
22	d4.4	d4.4	4.2	4.3	d4.4	3.8	b	4.2	g	g	3.4	3.6	g	3.4	b	b	3.1	2.7	3.2	d4.4	4.9	5.4	b	5.5
23	d4.4	d4.4	b	b	b	b	b	3.0	3.0	g	3.8	g	g	b	b	g	3.4	g	2.3	3.5	5.4	c	c	d4.4
24	c	c	c	c	2.1	b	g	2.8	3.2	3.5	3.4	b	g	g	g	g	c	c	3.6	3.3	e	d4.4	c	4.0
25	d4.4	d4.4	e	3.0	1.5	3.4	2.3	2.7	g	3.3	3.3	4.0	3.8	4.0	g	g	g	2.6	3.7	2.1	e	e	e	e
26	e	e	e	e	e	g	2.5	2.9	4.1	3.9	4.3	3.6	d4.4	4.1	4.2	4.0	g	2.7	3.6	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	d4.4	d4.4	3.5	4.0
28	d4.4	d4.4	3.1	e	e	g	g	g	g	g	3.8	3.8	3.6	3.9	g	g	b	c	c	c	c	d4.4	d4.4	b
29	d4.4	d4.4	b	d4.4	b	b	b	b	b	b	b	b	b	b	g	g	3.3	3.2	4.2	4.2	c	c	c	c
30	c	c	4.0	4.4	4.1	4.1	g	3.4	4.0	3.4	4.0	4.1	c	c	c	c	g	2.7	2.4	3.2	4.8z	5.8	4.7	3.4
31	4.1	2.0	e	e	1.4	g	g	3.4	s	g	g	g	g	g	3.3	s	s	g	2.5	e	2.1	e	e	e
Median	4.2	3.9	3.4	2.3	1.4	**	**	2.8	2.9	**	3.3	3.3	**	3.3	**	**	3.1	3.2	3.2	3.5	d4.4	d4.4	d4.4	4.0
No.	24	23	22	17	20	16	16	15	18	21	19	19	21	20	20	21	23	23	17	22	25	21	20	21

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF h'F2 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

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	a	320	a	320	300	220	230	320	370	360	370	320	340	320	300	1	240	250	250	240	c	c	290
2	290	c	c	c	e	290	c	c	320	320	370	320	380	c	340	340	300	a	c	a	a	a	330	310
3	330	a	b	c	c	c	c	c	c	c	c	c	c	c	c	300	1	c	250	250	250	250	280	a
4	a	300	a	280	280	260	240	c	310	320	c	c	300	280	280	270	260	230	c	240	240	240	240	270
5	280	270	280	270	e	260	240	b	310	340	300	320	320	300	300	270	260	230	c	230	240	240	260	270
6	300	b	c	e	300	260	230	220	340	320	360	330	350	310	310	300	280	220	c	230	240	250	260	260
7	280	280	280	280	280	c	c	c	c	c	c	330	320	310	310	320	260	250	280	270	320	c	f	f
8	a	a	f	c	b	a	a	b	g	g	450	360	350	360	350	300	a	c	a	b	a	a	b	b
9	b	b	b	b	b	b	b	b	230	g	g	b	b	350	380	330	320	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	b	b	b
11	b	b	b	b	b	b	b	250	380	380	360	410	350	300	300	300	320	a	c	c	c	b	b	b
12	b	b	b	b	b	b	250	310	350	350	400	400	380	350	350	320	300	300	280	a	a	a	a	b
13	a	a	a	330	320	270	240	1	1	300	320	320	320	350	1	350	350	250	250	260	300	a	c	b
14	b	a	290	270	270	270	240	1	330	360	400	b	340	310	350	1	1	230	260	a	a	320	320	290
15	300	280	a	b	310	280	a	b	b	340	370	330	330	320	300	300	1	b	260	250	250	310	a	340
16	280	270	310	270	280	260	240	1	300	320	330	320	310	310	310	320	300	a	330	350	a	b	b	b
17	b	a	b	b	b	b	b	b	410	480	450	370	430	450	390	360	a	a	c	a	a	b	a	a
18	b	b	b	b	b	b	b	b	b	b	b	c	c	c	450	c	320	c	c	c	a	c	b	b
19	b	b	b	a	b	b	260	430	b	b	c	c	c	c	c	250	300	a	c	b	b	a	a	b
20	b	a	a	b	b	b	300	b	b	b	c	b	b	c	c	370	340	280	c	a	a	b	a	a
21	b	280	350	290	260	280	250	c	c	c	c	c	300	300	320	c	n	240	230	c	360	a	a	340
22	a	a	a	a	a	a	260	c	c	c	c	320	330	c	c	c	270	270	240	280	a	a	b	a
23	a	a	b	b	b	b	310	320	c	c	350	c	c	c	c	310	310	300	260	290	290	c	c	a
24	c	c	c	c	320	b	240	300	350	350	c	c	c	c	340	300	c	c	240	230	240	310	c	270
25	320	270	c	b	280	230	230	330	300	c	c	c	c	c	c	c	270	220	230	230	230	250	260	260
26	250	270	250	260	240	240	220	c	c	270	c	270	c	280	280	270	260	230	250	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	280	280	320	c	360	a
28	a	a	340	300	300	250	220	360	400	350	350	360	350	320	c	320	c	c	c	c	c	a	a	b
29	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	330	1	270	270	c	c	c	c
30	c	c	280	270	240	220	220	280	c	c	c	300	c	c	c	c	310	300	240	240	300	a	a	320
31	330	270	290	270	280	240	280	320	330	320	300	300	280	280	280	270	260	220	250	240	230	240	250	240
Median	300	(270)	300	275	280	260	240	310	330	345	360	330	330	310	320	300	300	240	250	250	250	(250)	(260)	280
No.	11	9	12	12	17	15	19	11	16	18	16	17	18	18	19	22	20	16	18	17	15	9	9	12

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

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	360	a	320	240	330	320	280	290	320	g	g	g	320	340	320	300	300	290	300	300	290	c	c	350
2	340	360	c	c	330	330	c	c	320	320	g	320	g	c	340	340	320	a	c	a	320	350	330	320
3	350	370	b	c	c	c	c	c	c	c	c	c	c	c	c	320	300	c	300	290	280	300	310	a
4	f	320	a	320	320	280	280	c	310	320	c	c	300	290	290	290	270	290	c	310	300	310	310	310
5	320	320	330	310	330	290	270	b	g	g	300	320	320	300	300	280	280	290	c	300	310	280	300	350
6	330	350	370	330	320	280	260	270	g	320	g	330	350	310	310	310	290	290	c	280	280	300	310	320
7	320	330	310	300	310	c	c	c	c	c	c	330	320	310	310	330	320	290	300	f	350	c	f	f
8	a	a	f	c	b	a	a	b	g	g	g	360	350	370	b	310	a	c	a	b	(440)	a	b	b
9	b	b	b	b	b	350	b	b	290	g	g	b	b	350	380	330	320	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	350	b	b	b
11	b	b	b	b	b	320	290	300	g	g	g	g	350	300	300	300	330	a	c	c	c	b	b	b
12	b	b	b	b	b	b	300	310	g	350	g	g	g	350	350	320	320	350	320	a	a	a	a	b
13	380	a	390	350	340	290	280	270	300	310	320	320	320	350	350	350	360	320	290	300	330	a	c	b
14	b	300	320	300	320	300	280	330	330	360	400	b	340	310	350	330	320	280	320	370	a	350	350	320
15	330	320	a	b	320	310	310	b	b	340	g	330	330	330	300	320	320	b	320	300	300	350	a	(360)
16	330	(280)	(310)	280	280	280	290	300	300	320	330	320	320	320	320	350	310	a	350	350	a	b	380	b
17	b	a	b	b	b	b	b	b	g	g	g	370	g	450	410	360	a	a	c	a	a	b	a	a
18	b	b	b	b	b	380	b	b	b	b	b	c	c	c	450	c	360	c	c	c	a	c	b	b
19	b	b	b	340	b	b	330	g	b	b	c	c	c	c	c	(250)	300	a	c	b	b	a	a	b
20	b	310	a	b	b	b	300	b	b	b	c	b	b	c	c	370	340	320	c	a	a	b	a	a
21	b	290	350	f	280	290	290	c	c	c	c	c	c	c	c	c	n	c	c	c	360	a	a	350
22	a	a	a	a	360	300	300	c	c	c	c	320	330	c	c	c	c	c	c	300	a	a	b	a
23	a	a	b	b	b	b	310	320	c	c	g	c	c	c	c	310	320	330	310	310	350	c	c	a
24	c	c	c	c	320	320	280	300	350	350	c	c	c	c	c	c	c	c	c	320	300	350	c	300
25	320	280	340	b	300	260	270	330	310	c	c	c	c	c	c	c	c	c	c	c	c	c	300	280
26	300	300	310	310	270	280	270	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	330	c	c	c	360	a
28	a	a	340	310	320	320	350	g	g	g	g	g	c	320	c	c	c	c	c	c	c	a	a	b
29	b	b	b	b	b	b	b	b	b	b	b	b	b	c	c	c	340	330	300	330	c	c	c	c
30	c	c	280	270	260	260	c	290	c	c	c	300	c	c	c	c	330	330	310	320	310	a	a	350
31	360	300	320	s	s	280	280	g	330	320	300	300	290	280	290	280	280	280	310	310	300	300	s	270
Median	330	315	320	310	320	295	285	305	330	350	g	330	330	320	320	320	320	290	310	310	310	(310)	(310)	320
No.	12	14	13	12	17	20	20	14	17	17	16	16	16	16	16	20	21	13	13	15	16	9	9	12

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF h'F1 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17
1		q	220	210	210	200	200	190	180	220	220	q
2		c	210	210	220	200h	220	c	220	210	230	a
3		c	c	c	c	c	c	c	c	220	230	c
4		c	220	200	c	c	190	190	200	210	220	q
5		b	210	190	200	190	220	200	210	210	210	q
6		q	210	190	210	190	200	180h	200	210	210	q
7		c	c	c	c	170h	190	200	210	210	220	q
8		b	260	b	230	250	220	a	a	a	a	c
9		b	b	220	220	b	b	230	220	220	240	c
10		c	c	c	c	c	c	c	c	c	c	c
11		q	b	b	200	b	220	220	200	200	220	a
12		230	230	220	220	200	200	200	210	210	230	260
13		220	220	210	220	200	200	210	210	210	260	240
14		b	220	210	230	b	220	220	230	220	230	q
15		b	b	210	210	220	220	200	b	210	230	b
16		220	220	210	210	220	200	210	200	210	210	a
17		b	230	220	b	200h	200	a	a	a	a	a
18		b	b	b	230	210	210	b	b	b	a	a
19		240	b	b	230	220	230	a	210	210	250	a
20		b	b	b	230	b	b	230	240	230	240	q
21		240	230	230	220	220	210	210	200	b	n	240
22		220	220	210	200	200	190	210	210	b	230	220
23	b	220	220	210	210h	210	200h	220	220	220	210	240
24		220	210	220	210	220	200h	200	200	220	c	c
25		220	210	200	180	180	200	200	220	220	220	q
26		220	220	210	210	200	c	180	200	210	220	q
27		c	c	c	c	c	c	c	c	c	c	c
28		220	200	200	200	190	180	200h	200	200	240	c
29		b	b	b	b	b	b	200	220	220	220	220
30		220	200	190	200h	200	c	c	c	c	200	230
31	230	220	200	200	200	190h	190h	190	200	200	200	q
Median	*	220	220	210	210	200	200	200	210	210	220	240
No.		13	20	21	24	22	23	22	23	23	24	7

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

HOURLY VALUES OF h'E OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	e	100	100	100	100	100	100	a	a	100	100	100	120	100	
2	e	c	c	100	100	100	100	100	c	b	b	a	a	c	
3	c	c	c	c	c	c	c	c	c	c	110h	110	c	a	
4	120	110	c	100	100	c	c	100	100	100	100	110	110	c	
5	e	b	b	100	a	100	100	a	100	100	100	100	100	c	
6	e	130	a	a	a	100	100	100	100	110	110	b	110	c	
7	c	c	c	c	c	c	110	100	a	100	110	110	a	a	
8	e	c	b	a	b	b	a	100	a	a	a	a	c	a	
9	b	b	b	b	b	b	b	b	b	b	110	a	c	c	
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
11	b	b	100	b	b	b	b	b	b	b	100	100	a	c	
12	b	b	110	100	100	100	100	100	100	100	100	100	110	a	
13	110	110	100	100	100	100	100	100	100	100	b	a	100	a	
14	e	100	b	100	100	b	b	b	b	b	100	a	a	a	
15	e	c	b	b	100	100	100	100	100	b	a	b	b	c	
16	e	100	100	100	100	100	100	100	a	100	b	100	a	b	
17	b	b	b	100	100	b	b	100	a	a	a	a	a	c	
18	b	b	b	b	b	b	b	b	b	b	b	a	a	c	
19	b	b	120	b	b	b	100	b	a	b	100	100	a	c	
20	b	b	b	b	b	a	b	b	a	b	100	100	a	c	
21	b	100	b	b	a	a	a	100	100	100	b	b	a	a	
22	e	b	100	100	100	100	100	100	100	b	b	100	100	a	
23	b	b	100	100	100	100	100	100	b	b	100	100	100	a	
24	b	120	100	100h	100	100	b	100	100	100	100	c	c	a	
25	100	a	100	100	100	100	a	a	100	100	100	100	100	a	
26	100	100	100	100	100	a	a	a	a	100	100	100	100	a	
27	c	c	c	c	c	c	c	c	c	c	c	c	c	b	
28	150	110	100h	100	100	100	100	100	a	100h	100	b	c	c	
29	b	b	b	b	b	b	b	b	b	100	100	100	b	a	
30	100	100	100	100	100	100	100	c	c	c	c	100	100	a	
31	100	100	100	100	100	100	100	100	100	100	s	s	100	b	e
Modian	e	100	100	100	100	100	100	100	100	100	100	100	100	*	*
No.	16	12	14	17	17	15	15	16	11	15	18	16	12		

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF h'Es OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

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	100	100	100	120	e	100	120	120	g	g	g	g	100	100	g	g	120	120	g	100	e	c	c	110
2	120	100	c	c	e	g	c	c	g	g	g	g	g	c	b	b	120	100	c	100	100	100	100	100
3	e	120	130	c	c	c	c	c	c	c	c	c	c	c	c	g	g	c	130	120	e	e	100	100
4	100	120	100	120	e	g	g	c	120	g	c	c	g	g	g	g	g	g	c	e	e	e	e	e
5	e	e	e	e	e	g	g	b	g	100	g	g	100	g	g	g	g	g	c	e	e	e	e	e
6	e	100	100	e	e	g	g	110	130	110	g	110	g	g	g	110	b	g	c	e	e	e	e	e
7	e	e	110	e	e	c	c	c	c	c	c	g	110	100	g	g	120	120	130	120	110	c	100	100
8	100	100	110	c	100	100	100	b	110	b	b	110	120	100	110	100	110	c	100	100	110	100	100	b
9	120	b	100	b	b	b	b	b	b	g	g	b	b	b	g	g	150	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	b	b	b
11	100	110	100	b	b	b	b	120	b	b	b	b	b	b	b	g	120	100	c	c	c	110	b	b
12	100	b	b	b	b	b	b	g	130	120	120	120	g	g	g	110	g	110	110	110	100	110	110	120
13	110	100	100	100	100	g	g	120	g	100	120	g	100	100	100	b	100	130	120	120	110	100	c	100
14	100	110	b	b	100	110	g	b	g	g	b	b	b	b	b	g	110	120	110	110	100	100	100	100
15	100	120	100	b	110	g	100	b	b	g	g	g	g	g	b	120	b	b	g	130	110	110	100	100
16	110	100	110	110	100	100	g	140	140	g	g	120	g	100	150	b	120	110	b	100	100	b	100	b
17	100	110	110	110	100	b	b	b	120	g	b	b	100	100	100	100	100	100	c	100	100	b	100	100
18	b	b	110	b	b	b	b	b	b	b	b	b	g	b	100	b	110	100	c	c	100	100	b	b
19	b	b	b	110	b	b	b	g	b	b	b	g	b	100	b	120	140	100	c	b	b	100	100	b
20	100	100	100	b	b	b	b	b	b	b	100	b	b	100	150	150	150	100	c	100	110	b	100	100
21	b	100	120	110	e	b	100	b	b	100	100	100	100	g	120	b	b	120	120	c	110	100	100	100
22	100	100	100	100	100	100	b	100	g	g	120	120	g	120	b	b	130	120	110	110	110	100	b	100
23	100	100	b	b	b	b	b	150	120	g	110	g	g	b	b	g	150	g	120	100	100	c	c	100
24	c	c	c	c	100	b	g	140	120	110	120	b	g	g	g	g	c	c	110	110	e	100	c	150
25	100	100	e	100	100	100	110	120	g	100	100	100	100	100	g	g	g	120	110	120	e	e	e	e
26	e	e	e	e	e	g	130	120	100	110	100	100	100	100	100	100	g	150	110	c	c	c	c	c
27	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	b	b	110	100	110	100
28	100	100	120	e	e	g	g	g	g	g	120	100	120	100	g	g	b	c	c	c	c	100	100	b
29	100	100	b	100	b	b	b	b	b	b	b	b	b	b	g	g	120	120	120	110	c	c	c	c
30	c	c	120	110	130	120	g	150	110	130	120	110	c	c	c	c	g	140	100	110	100	100	100	100
31	100	130	e	e	110	g	g	100	s	g	g	g	g	g	100	s	s	g	120	g	100	e	e	e
Median	100	100	105	110	100	100	105	120	120	110	120	110	100	100	100	110	120	120	110	110	105	100	100	100
No.	19	20	18	11	11	7	6	12	10	9	11	10	10	12	9	8	16	18	15	18	18	15	15	16

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

Time used: 157.5° E.M.T.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

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	2.9	a	2.9	2.7	2.9	3.0	3.3	3.2	3.2	3.0	3.0	2.9	3.1	3.2	3.2	3.2	3.2	3.2	3.1	3.0	3.1	c	c	2.9
2	3.0	2.8	c	c	2,7	2.9	c	c	3.1	3.2	3.0	3.1	3.0	c	3.0	3.0	3.0	a	c	a	3.1	2.9	2.9	3.0
3	2.9	2.9	b	c	c	c	c	c	c	c	c	c	c	c	c	3.1	3.2	c	3.1	3.0	3.2	3.1	3.0	a
4	f	3.0	3.0	3.1	3.1	3.3	3.2	c	3.3	3.2	c	c	3.2	3.2	3.2	3.2	3.2	3.2	c	3.1	3.1	3.0	3.1	3.0
5	3.0	3.1	2.9	3.1	3.0	3.2	3.2	3.1	3.3	3.0	3.3	3.1	3.1	3.2	3.2	3.2	3.2	3.2	c	3.1	3.0	3.2	3.0	2.8
6	3.0	2.9	2.8	3.0	3.0	3.3	3.5	3.3	3.0	3.1	3.0	3.1	3.0	3.2	3.1	3.1	3.1	3.2	c	3.1	3.1	3.2	3.0	3.0
7	2.9	3.1	3.0	3.1	3.0	c	c	c	c	c	c	3.1	3.1	3.1	3.1	3.0	3.0	3.1	3.0	f	3.0	c	f	f
8	a	a	f	c	b	2.8	a	b	g	g	2.6	3.1	2.9	2.9	b	3.2	2.8	c	a	b	(2.5)r	a	b	2.6
9	b	b	b	b	b	3.0	b	3.2	3.2	g	g	b	b	3.0	2.9	2.9	2.9	c	c	c	c	c	c	c
10	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.8	b	b	b
11	b	b	b	b	b	3.0	3.1	3.0	2.8	2.9	3.1	2.8	3.0	3.2	3.2	3.2	3.0	a	c	c	c	b	b	b
12	b	b	b	b	b	b	3.1	3.1	3.1	3.1	2.9	2.9	3.0	3.0	2.9	3.0	3.1	2.9	3.0	a	a	a	a	b
13	2.7	a	2.6	2.9	3.0	3.3	3.3	3.3	3.2	3.1	3.0	3.1	3.0	3.0	2.9	2.9	2.8	2.7	3.1	2.8	2.8	a	c	b
14	b	3.1	2.9	3.1	3.0	3.3	3.2	3.0	3.1	2.9	2.7	b	3.0	3.0	3.0	3.0	3.1	3.3	3.0	2.8	a	2.9	3.0	3.0
15	3.0	3.0	a	b	2.8	3.1	3.1	b	b	3.1	3.0	3.1	3.1	3.1	3.2	3.0	3.0	b	3.0	3.2	3.1	2.8	a	(2.8)
16	2.8	(3.1)	(2.8)	2.9	3.1	3.3	3.2	3.2	3.2	3.1	3.0	3.0	3.1	3.1	3.0	2.9	3.1	a	3.0	3.0	a	b	2.8	b
17	b	a	b	b	b	3.1	b	b	2.8	2.5	2.7	2.8	2.8	2.5	2.6	2.8	a	a	c	a	a	b	a	a
18	b	b	b	b	b	2.8	b	b	b	b	b	c	c	c	2.6	c	2.8	c	c	c	a	c	b	b
19	b	b	b	2.9	b	2.9	3.0	2.8	b	b	c	c	c	c	c	(3.6)	3.1	a	c	b	b	a	a	b
20	b	3.0	2.9	b	b	b	3.1	b	b	b	c	b	b	c	c	3.0	2.9	3.1	c	3.0	a	b	a	a
21	b	3.3	2.8	f	3.2	3.2	3.2	c	c	c	c	c	c	c	c	c	n	c	c	c	2.7	a	a	3.0
22	a	a	a	2.9	2.8	3.1	3.3	c	c	c	c	3.1	3.1	c	c	c	c	c	c	3.1	a	a	b	a
23	a	a	b	b	b	b	3.2	3.1	c	c	3.1	c	c	c	c	3.1	3.0	3.0	2.9	2.8	2.9	c	c	a
24	c	c	c	c	3.1	3.0	3.3	3.2	3.0	3.1	c	c	c	c	c	c	c	c	c	3.0	3.0	2.9	c	3.0
25	2.7	3.1	3.0	b	3.1	3.4	3.4	3.1	3.2	c	c	c	c	c	c	c	c	c	c	c	c	c	3.1	3.1
26	3.0	3.1	3.0	3.0	3.2	3.3	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	3.0	c	c	c	2.8	2.7
28	a	a	2.8	2.8	3.0	3.1	3.0	2.9	2.8	3.0	3.1	3.0	c	3.1	c	c	c	c	c	c	c	a	a	b
29	b	b	b	b	b	b	3.5	b	b	b	b	b	b	c	c	c	3.0	3.0	3.2	3.0	c	c	c	c
30	c	c	3.0	3.0	3.3	3.5	c	3.2	c	c	c	3.3	c	c	c	c	2.9	2.9	3.1	3.0	3.0	a	a	2.8
31	2.9	3.0	3.0	s	s	3.1	3.4	3.0	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.0	3.1	3.1	3.2	s	3.2
Median	2.9	3.0	2.9	3.0	3.0	3.1	3.2	3.1	3.1	3.1	3.0	3.1	3.0	3.1	3.0	3.0	3.0	3.1	3.0	3.0	3.0	(3.0)	(3.0)	3.0
No.	12	14	15	13	17	23	20	16	17	17	16	16	16	16	16	20	22	13	13	16	16	9	9	14

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

HOURLY VALUES OF (M3000)F1 OBSERVED DURING OCTOBER 1951 AT MACQUARIE ISLAND

Hour / Day	06	07	08	09	10	11	12	13	14	15	16	17
1		q	3.6	3.7	3.7	3.7	4.0	3.9	3.8	3.8	1	q
2		c	3.6	3.8	3.7	3.6	3.8	c	3.7	3.5	3.3	a
3		c	c	c	c	c	c	c	c	3.7	1	c
4		c	3.6	3.6	c	c	4.0	4.0	3.7	3.8	1	q
5		b	3.7	3.7	3.7	3.8	3.7	3.8	3.8	3.8	1	q
6		q	3.5	3.6	3.6	3.7	3.6	3.7	3.7	3.8	1	q
7		c	c	c	c	3.7	3.8	3.7	3.8	3.7	3.7	q
8		b	3.4	3.6	3.6	3.6	3.7	3.5	a	a	a	c
9		b	b	3.6	3.6	b	b	3.7	3.7	3.7	3.5	c
10		c	c	c	c	c	c	c	c	c	c	c
11		q	b	3.9	3.7	3.6	3.7	3.7	3.8	3.7	3.5	a
12		3.7	3.6	3.7	3.8	3.7	4.0	3.7	3.7	3.6	3.5	3.6
13		1	1	3.7	3.6	3.6	3.7	3.7	1	3.4	3.5	1
14		1	3.6	3.6	3.5	b	3.6	3.6	3.6	3.6	1	q
15		b	b	3.6	3.6	3.5	3.7	3.6	3.6	3.7	1	b
16		1	3.7	3.7	3.6	3.6	3.7	3.6	3.7	3.7	3.6	a
17		b	3.5	3.6	3.6	3.5	3.6	a	a	a	a	a
18		b	b	3.5	3.6	3.7	3.8	b	b	b	a	a
19		3.3	b	b	3.6	3.6	c	3.6	c	4.0	1	a
20		b	b	b	3.6	b	b	3.8	3.7	3.6	3.5	q
21		3.4	3.5	3.5	3.6	3.7	3.8	3.7	3.8	3.5	h	1
22		1	3.6	3.7	3.7	3.9	3.8	3.7	3.7	b	3.7	3.8
23	3.6	3.5	3.7	3.8	3.6	3.8	3.7	3.8	3.7	3.7	3.7	3.5
24		3.7	3.6	3.7	3.7	3.6	3.8	3.8	3.5	3.6	c	c
25		3.6	3.7	3.6	3.8	c	4.0	3.8	4.0	3.8	1	q
26		3.7	3.8	3.7	c	3.8	c	3.8	3.7	3.8	1	q
27		c	c	c	c	c	c	c	c	c	c	c
28		3.5	3.7	3.8	3.8	3.9	4.0	3.7	3.8	3.6	3.5	c
29		b	b	b	b	b	b	3.8	3.6	3.6	3.6	1
30		3.7	3.8	3.9	4.0	3.6	c	c	c	c	3.6	3.6
31	1	3.6	3.6	3.7	3.7	3.7	3.9	3.7	3.8	3.7	1	q
Median	*	3.6	3.6	3.7	3.6	3.7	3.8	3.7	3.7	3.7	3.5	*
No.		10	19	24	24	22	22	24	22	24	13	

Sweep: 1.0 - 13.0 Mc/s in 1m 55s Time used: 157.5° E.M.T. MACQUARIE ISLAND (M3000)F1, OCTOBER 1951 195.

HOURLY VALUES OF f°F2 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11
1	4.4	3.8	3.5	3.3	3.4	4.5	5.2	5.7	6.1	6.3z	6.8	7.3
2	4.7	4.0f	3.9	c	3.9f	4.2f	5.2	6.0z	6.7	6.8	7.2	7.2
3	a	a	a	3.9f	4.4	c	c	5.6	5.7	6.0	6.0	6.4z
4	c	c	5.3	5.0f	3.9	b	4.5	4.6	b	b	5.8	6.0
5	a	a	b	b	3.7	4.3	4.5z	4.9	5.5	6.1	6.6	6.8
6	5.0f	4.0	3.9	3.4f	3.3	4.0	4.6	5.1	5.3	5.6	5.8	5.9
7	b	b	b	b	b	b	b	b	4.6	5.0	5.7	5.8
8	b	3.5	b	b	3.8	4.0	4.3	c	c	c	c	5.4
9	c	c	c	3.1f	4.1	5.4z	6.2	6.7	7.7	7.2	7.5	7.2
10	b	b	b	b	b	3.3	3.8	4.6	4.7v	4.8	4.8v	4.9
11	4.0	3.5	3.2j	2.8j	3.5	4.6	5.5	6.4	6.3	6.8	6.5	7.0
12	b	b	b	b	b	5.0	5.4	5.8	5.7	6.0	6.5	6.5
13	b	b	b	b	4.3	4.9	4.4	4.5	4.9	4.9	c	5.6
14	b	3.9	a	b	b	b	b	4.5	g	g	4.5	5.0
15	b	b	b	b	b	b	b	b	b	b	b	b
16	6.0f	b	4.5f	b	3.9	4.5	4.5	5.1	5.4z	5.4	5.7	5.7
17	b	b	b	b	b	b	b	b	b	b	b	b
18	5.0s	4.7s	4.6f	4.2f	4.2	5.1	5.3	5.3	5.5f	5.2	5.7	6.2z
19	c	4.0f	3.7f	3.4f	4.0	4.8	5.3	5.6	5.8	6.1z	6.3v	6.5
20	c	3.9f	c	3.5f	3.9	5.2	5.4z	5.8	6.0	6.6	6.9	7.5
21	3.4	2.8	3.8	b	3.8	3.9	4.5	4.7	5.2	5.5	5.5	5.2
22	4.2	3.8	3.0	3.2	4.0z	4.1f	4.6	5.2	6.0	5.8	6.4	6.8
23	a	4.0	3.2f	c	3.3	b	g	4.5f	4.6f	5.6	5.2f	5.7v
24	3.8	a	b	b	4.0	4.1f	4.3	4.7	5.6	6.0	6.0	5.7v
25	c	c	b	b	3.7	4.0f	4.4	5.0	5.6	5.8	5.8	6.0
26	a	a	c	c	c	4.3f	4.9f	5.0	c	c	6.1	6.6
27	4.2	b	4.7	4.5	4.2	4.4z	4.3	4.8	5.0	5.2	5.8	5.9
28	c	c	c	c	3.9	4.5	c	c	c	c	c	c
29	a	b	a	a	3.8	4.0	4.8	4.9f	5.5	6.1	6.2	6.4
30	c	c	c	c	c	c	c	c	c	c	c	c
Median	4.3	3.9	3.8	3.4	3.9	4.4	4.6	5.0	5.5	5.8	6.0	6.1
No.	10	12	12	11	22	22	23	24	23	23	24	26

Sweep: 1.0 - 13.0 Mc/s in 1m55s

Time used: 157.5°E.M.T.

HOURLY VALUES OF f°F2 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	7.3	7.2	6.8	6.8	6.9	6.8	c	6.8	s	a	5.7	c
2	7.3	7.7	7.9	8.0	8.2	8.0	6.5	5.7f	4.5f	b	b	a
3	6.5	6.6	b	5.6f	5.7f	5.6	5.6	a	b	a	a	c
4	6.3	7.0	9.2	f	f	a	c	c	b	3.8	a	3.0f
5	7.2	7.1	7.2	7.7	6.4	5.8z	b	c	c	c	b	4.9
6	6.2	6.3	6.4	6.7	6.8	7.7	6.7	5.4	b	b	b	b
7	5.8	6.5	6.4	(7.0)b	7.0	c	a	4.1	b	b	b	b
8	5.5	5.5	5.3	5.6	5.7	5.8	c	6.2	6.3p	5.9	b	b
9	7.1	7.3	7.3	7.8	c	5.6	c	5.1f	5.0	b	b	b
10	5.7	5.4	5.6	5.9	5.6	5.9	c	5.9	6.5	5.6	5.2	4.3
11	7.1	6.9	7.5	7.2	7.4	7.3p	b	b	b	b	b	b
12	7.0	b	7.3	7.2	7.0	5.6	5.7	b	b	b	b	b
13	5.8	6.0	5.7	6.0	6.3	b	b	a	b	b	b	b
14	5.4	6.4	6.5	5.6	5.2	4.5	a	a	4.3	4.7	4.3	b
15	7.0	7.0	7.0	8.3	7.0	5.7	c	5.1f	b	b	b	b
16	5.8	5.9	6.0	6.7z	7.7	7.0f	7.0	5.4	4.8	c	b	b
17	b	b	b	6.2z	6.4z	6.5	b	5.8	5.4	b	b	5.4
18	6.5	6.8z	6.6z	6.0	6.7	6.2	a	c	5.1	4.9	a	a
19	6.6v	c	c	c	c	7.5	7.0	7.0p	6.6	6.0	5.2	4.3
20	7.5	c	c	c	c	6.6	7.4	6.8	6.7	5.2	5.0f	4.2f
21	5.8	6.2	5.9	6.2	5.8	6.0z	5.6	c	5.7	5.7	4.7	4.7
22	6.5	6.3	6.8	6.5	7.2	6.9	7.5	7.1	6.4	5.5	a	a
23	5.3v	5.5z	6.0z	5.8	6.3	6.7	c	5.5	5.1f	a	a	4.8
24	6.2v	6.0z	5.6	5.9	c	c	c	c	c	c	c	c
25	6.4	7.0	6.5	6.5	6.5	6.8	7.0	5.8	5.1	b	a	a
26	6.3	6.5z	6.1z	6.5	6.5	6.2z	6.4	6.3p	6.1p	6.0	5.5	a
27	6.2	5.9	5.9z	5.9	5.8	6.1z	6.5	6.2	c	c	c	c
28	c	7.2	7.6	7.0	7.0	7.0	7.0	7.4	7.7	5.7	4.8	a
29	6.2	7.0	6.3	6.2v	6.9	5.0f	5.0f	4.9	b	b	a	c
30	c	c	c	c	6.3z	6.7	6.8	5.0	5.2	5.3	5.3	4.8
Median	6.3	6.5	6.5	6.5	6.5	6.4	6.7	5.8	5.4	5.6	(5.2)	(4.7)
No.	27	25	25	26	25	26	15	20	17	12	9	9

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF foF1 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18
1	q	q	q	4.5	4.7	4.7	4.7	4.8	4.7	4.6	4.5	4.3	3.8	c
2	q	q	4.4	4.5	4.6	4.6	4.8	4.8	4.7	4.6	4.4	4.4	q	q
3	c	c	4.3	4.2	4.6	4.7	4.7	4.7	4.6	b	a	a	a	a
4	b	3.8	4.1	b	b	b	4.8	4.9	4.5	b	a	a	a	c
5	q	q	q	1	4.6	4.7h	4.8	4.8h	4.8	4.3h	4.5	4.3	4.0	b
6	q	q	4.2	4.4	4.6	4.6	4.7	4.7	4.7	4.6	4.5	4.3	4.0	q
7	b	b	b	4.1	4.5	4.5	4.6	4.6	4.6	4.6	4.4	4.3	c	c
8	q	q	c	c	c	c	4.5	4.5	4.7	4.5	4.4	4.2	4.0	c
9	q	3.8	4.3	4.5	4.7	4.8	4.8	4.7	4.7	4.8	4.6	c	a	c
10	q	q	4.1	4.1	4.3	4.4	4.5	4.5	4.6	4.5	4.5	4.2	3.9	c
11	q	q	4.4	4.4	4.7	4.3	4.6	5.0	4.8	4.7	1	4.3	4.0	q
12	q	q	4.2	4.5	4.5	4.7	4.7	4.7	b	4.6	4.3	4.3	4.1	b
13	q	3.9	4.1	4.2	4.3	c	4.5	4.6	4.6	4.5	4.4	4.3	b	b
14	b	b	4.0	3.9	4.0h	4.2	4.3	4.3	4.3	4.5	4.3	4.1	3.9	a
15	b	b	b	b	b	b	b	4.7	4.5	4.6	4.7	4.4	a	c
16	q	q	4.2	4.3	4.5	4.5	4.6	4.7	4.6	4.6	4.4	4.3	4.0	a
17	b	b	b	b	b	b	b	b	b	b	4.5	4.3	4.0	b
18	3.5	1	4.5	4.5	4.4	4.6	4.7z	4.8	4.6	4.5	4.5	4.2	4.0	c
19	3.6	3.9	4.2	4.4	4.7	4.7	4.8	4.7	c	c	c	c	1	3.5
20	q	q	4.5	4.4	4.6h	4.7	4.8	4.7	c	c	c	c	a	3.6
21	q	3.8	b	4.3	4.4	4.6	4.5	4.5	4.5	4.5	4.4	4.3	4.1	q
22	q	4.0	4.2	4.5	4.5	4.7	4.7	4.8	4.8	4.7	4.5	4.0	1	3.5
23	b	3.8	4.0	4.3	4.5	4.5	4.6	4.6	4.6z	4.6q	4.4	4.2	4.0	c
24	3.5	1	4.3	4.4	4.5	4.6	4.6	4.6	4.6	4.6	4.5	c	c	c
25	q	4.0	4.1	4.4	4.6	4.9	4.8	4.7h	4.8	4.6	4.5	4.4	4.5	3.6
26	q	q	4.4	c	c	4.7	4.8	4.8	4.7	4.6	4.5	4.4	4.3	1
27	q	3.8	4.2	4.3	4.5	4.6	4.7	4.8	4.7	4.7	4.5	4.4	4.4	q
28	q	c	c	c	c	c	c	c	4.8h	4.7	4.8	4.5	1	q
29	q	4.3	4.4	4.7	4.7h	4.7	4.7	4.7h	4.7	4.7	4.6	4.5	4.2	3.8
30	c	c	c	c	c	c	c	c	c	c	c	4.4h	4.3	4.0
Median	*	3.8	4.2	4.4	4.5	4.6	4.7	4.7	4.7	4.6	4.5	4.3	4.0	3.6
No.		10	21	22	23	23	26	27	25	24	24	24	18	6

Sweep: 1.0 - 13.0 Mc/s in 1m55s

Time used: 157.5°E.M.T.

HOURLY VALUES OF f°E OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	1.4	2.0	s	2.8	3.0	3.2	a	3.3	a	3.4	3.2	s	s	2.5	c	
2	e	2.0	2.5	c	3.1	3.3	3.3	3.4	3.4	3.3	3.3	3.0	b	a	e	
3	e	c	c	a	3.1	3.2	3.4	3.4	3.4	3.4	b	a	a	a	a	
4	b	b	b	c	b	b	b	b	3.4	b	b	a	a	a	c	
5	e	e	a	2.8	3.1	3.2	3.3	3.3	3.4	3.2	3.3	3.2	3.0	a	b	
6	e	b	b	b	c	b	b	3.5	a	3.4	3.2	3.0	c	b	a	
7	e	b	b	b	b	b	b	b	3.4	a	3.2	a	a	c	c	
8	e	e	a	c	c	c	c	b	b	b	b	b	b	c	c	
9	e	a	c	c	3.2	3.4	3.4	3.4	3.5	3.5	3.4	3.2	c	a	c	
10	b	a	a	a	3.1	a	a	3.4	3.5	a	a	a	a	a	c	
11	e	e	c	c	c	3.2	3.3	3.3	3.4	3.4	3.3	3.2	2.9	2.4	a	
12	b	2.1	b	c	a	3.3	3.3	3.2	a	b	b	3.3	3.0	c	b	
13	c	c	c	c	c	3.1	c	3.4	3.4	3.3	3.3	3.0	c	b	a	
14	b	b	b	b	b	3.1	3.3	3.3	b	b	a	a	3.2	.2.8	a	
15	b	b	b	b	b	b	b	b	b	b	a	3.1	a	a	c	
16	b	b	b	b	3.1	3.3	3.4	b	b	b	b	3.1	c	b	a	
17	b	b	b	b	b	b	b	b	b	b	b	3.2	a	3.0z	b	
18	b	2.4	b	b	b	b	3.4	3.4	3.5	3.4	3.2	3.2	3.0	a	c	
19	1.7	2.3	2.5	a	3.0	3.2	3.3	3.5	3.5	c	c	c	c	2.7	a	
20	e	a	a	2.3	3.0	a	a	3.6	a	c	c	c	c	a	a	
21	a	b	a	b	b	a	b	b	b	3.4	3.3	3.2	3.0	2.6	a	
22	1.7	2.2	2.6	b	a	3.3	3.3	a	3.4	3.4	3.3	3.1	2.9	2.7	2.3	2.0
23	a	b	a	2.9	3.3	3.3	3.3	a	3.4	3.3z	3.3z	b	b	b	c	
24	a	2.4	b	b	b	3.2	3.3	3.5	a	3.3	a	3.1	c	c	c	
25	a	2.4	2.6	2.9	3.1	3.2	3.3	3.4	3.3	3.3	3.3	3.3	b	b	b	
26	c	2.6h	2.6	3.1	c	c	b	b	b	3.4	3.3	3.2	3.0	2.8h	c	
27	a	2.5h	b	a	3.1	3.3	3.4	a	3.5	a	3.4	3.2	3.0	2.9	2.4	2.0
28	a	2.5	c	c	c	c	c	c	c	a	a	3.3	3.0	a	2.5	
29	e	b	b	b	a	3.3	b	b	a	a	a	3.3	3.3f	2.9	2.3	
30	c	c	c	c	c	c	c	c	c	c	c	c	3.1	a	a	
Median	E	2.2	2.6	2.8	3.1	3.2	3.3	3.4	3.4	3.4	3.3	3.2	3.0	2.8	2.3	*
No.	13	14	5	6	12	17	15	16	15	15	15	19	12	10	5	

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF fEs OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

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	4.8	1.7	e	e	g	g	g	g	3.5	3.9	4.0	3.5	3.5	g	g	s	s	g	c	2.0	1.9	8.7	4.0	c
2	6.0	4.1	3.1	e	g	g	g	3.4	g	g	g	3.5	4.1	g	g	g	b	3.0	5.7	7.5	8.3	5.0	5.1	5.5
3	5.5	6.0	5.5	5.0	4.0	c	c	3.4	3.4	3.5	3.6	g	g	g	b	7.1	5.2	5.9	5.6	5.7	4.2	5.5	5.2	c
4	c	c	6.5	2.6	b	b	b	g	b	b	b	b	g	b	b	7.2	6.0	9.4	c	c	4.3	4.3	5.9	4.2
5	5.4	7.0	3.6	5.3	4.1	4.0	3.6	3.2	3.4	3.6	4.7	3.5	g	g	g	3.4	3.2	3.4	b	c	c	c	5.2	4.7
6	5.5	2.4	3.3	4.8	4.0	b	b	b	3.4	b	b	g	3.4	g	g	g	c	b	4.1	4.1	b	b	b	b
7	b	5.3	b	b	6.7	b	b	b	b	b	b	b	g	3.5	3.3	4.2	5.2	c	c	5.9	b	5.3	5.3	b
8	b	4.2	5.2	b	3.3	2.5	3.4	c	c	c	c	b	b	b	b	b	3.2	4.0	c	2.5	2.0	c	2.3	b
9	c	c	c	2.4	g	2.3	c	c	g	g	g	g	g	g	g	g	c	3.6	c	4.0	1.7	4.3	b	4.8
10	3.5	b	5.2	5.8	b	3.5	3.5	3.1	3.4	3.3	3.5	g	g	3.6	3.6	4.0	3.4	3.3	c	6.3	4.2	2.4	2.4	3.5
11	3.5	e	e	e	4.1	2.3	c	c	c	3.8	3.8	4.6	3.6	3.9	g	g	g	c	2.1	3.2	b	b	4.2	4.2
12	4.2	b	2.4	b	b	2.5	b	c	3.3	3.4	4.0	3.4	3.6	b	b	3.4	3.4	c	b	b	b	b	b	b
13	b	3.3	b	3.7	c	c	3.3	3.5	3.6	4.2	c	g	g	3.4	g	g	c	b	3.8	c	b	4.3	5.0	5.6
14	5.7	4.0	5.7	4.1	b	b	b	3.3	3.3	3.4	3.5	g	b	b	4.3	3.5		g	5.9	c	5.6	2.9	4.4	b
15	4.4	b	5.4	4.3	b	b	b	b	b	b	b	b	b	b	4.5	3.5	3.8	5.3	c	b	b	4.8	5.7	b
16	6.2	b	b	b	b	b	3.4	b	3.3	3.3	3.4	b	b	b	3.4	g	c	3.3	5.1	2.9	4.5	c	5.8	b
17	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	g	3.3	3.2	b	3.9	5.4	6.0s	4.9	5.3
18	4.9	3.2	e	e	b	g	3.4	b	b	b	3.5	5.2	3.9	g	3.4	g	3.7	5.5	c	c	4.6	7.0	9.2	8.8
19	c	2.8	e	e	2.1	2.4	g	3.0	3.2	g	3.4	4.1	g	c	c	c	c	4.1	5.7	5.6	4.8	2.1	4.2	2.4
20	c	4.2	c	4.1	2.6	3.6	3.3	g	g	5.4	4.7	3.6	4.2	c	c	c	c	6.5	5.6	2.1	2.0	1.6	e	1.8
21	1.7	2.0	5.1	5.7	5.0	3.2	3.5	b	b	3.5	b	b	b	g	3.4	6.5	6.6	6.8	4.3	c	5.7	4.3	4.0	6.0
22	2.4	e	1.6	e	3.4	2.8	g	b	5.2	4.1	5.9	4.0	g	g	g	g	3.2	3.2	4.1	2.2	2.3	3.2	9.5	5.7
23	5.3	5.0	2.3	c	2.8	b	3.6	4.1	4.2	g	g	3.7	4.0	g	g	b	b	b	c	4.3	5.3	5.5	4.8	4.8
24	4.9	5.5	5.6	3.6	4.7	3.9	b	b	b	3.4	4.1	g	4.1	g	3.4	3.8	c	c	c	c	c	c	c	c
25	c	c	7.2	5.7	5.1	4.0	4.0	g	g	g	g	g	g	5.4	3.4	g	9.4	7.4	4.6	5.0	4.2	b	5.8	6.0
26	5.5s	5.9	c	c	c	g	4.1	4.1	c	c	b	b	b	g.	g	g	g	3.0	c	2.8	3.1	8.0	6.8	5.1
27	5.4	5.3	4.9	4.0	3.3	4.0	b	4.1	g	g	3.5	3.9	4.1	3.5	g	g	g	g	2.6	3.5	c	c	c	c
28	c	c	c	c	3.1	4.6	c	c	c	c	c	c	c	4.1	3.0	3.5	3.4	4.8	6.7	5.7	3.0	b	5.3	5.7
29	5.8	b	5.7	5.8	3.9	b	b	b	3.6	g	b	b	4.0	4.2	4.0	3.4	3.3	3.3	3.1	3.0	b	b	c	c
30	c	c	c	c	c	c	c	c	c	c	c	c	c.	c	c	c	3.2	4.1	4.8	2.8	1.9	4.7	2.8	4.2
Median	5.3	4.1	4.9	4.0	3.9	2.6	3.4	3.2	3.4	3.4	3.5	3.5	3.4	**	3.0	3.4	3.4	3.6	4.7	3.9	4.2	4.7	5.0	5.0
No.	19	19	21	21	19	18	15	14	18	20	18	19	21	20	22	24	20	23	16	21	20	19	24	18

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF h'F2 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

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	270	260	250	220	240	220	200	300	310	320	300	300	300	300	300	300	260	c	240	240	a	270	c
2	a	300	280	260	240	230	210	300	300	280	310	310	300	320	280	290	300	220	230	a	a	b	b	a
3	a	a	a	a	a	c	c	330	340	340	420	380	350	370	b	400	370	a	a	a	b	a	a	c
4	c	c	320	280	270	b	350	470	b	b	450	400	430	360	340	f	f	a	c	c	b	a	a	a
5	a	a	b	b	300	260	230	220	1	350	340	320	320	320	330	280	300	300	b	c	c	c	b	350
6	300	290	270	260	260	b	260	330	370	370	360	380	340	330	340	300	320	300	270	240	b	b	b	b
7	b	b	b	b	b	b	b	b	500	450	450	380	460	390	380	350	310	c	c	300	b	b	b	b
8	b	b	b	b	b	290	250	c	c	c	c	450	430	420	420	380	350	320	c	250	250	280	b	b
9	c	c	c	230	250	240	240	270	250	270	260	290	280	280	320	300	c	330	c	350	290	b	b	b
10	b	b	b	b	b	a	230	400	470	470	500	600	380	410	400	320	340	300	c	a	250	250	250	270
11	270	270	260	260	c	240	210	270	260	290	280	280	300	300	280	1	270	270	250	b	b	b	b	b
12	b	b	b	b	b	240	230	300	340	320	340	350	340	b	330	300	320	380	b	b	b	b	b	b
13	b	b	b	b	300	270	450	1	450	620	c	420	390	370	420	400	320	350	300	c	b	b	b	b
14	b	350	a	b	b	b	b	420	g	g	610	480	500	390	360	400	320	470	a	c	a	330	a	b
15	b	b	b	b	b	b	b	b	b	b	b	b	300	330	350	300	270	a	c	b	b	b	b	b
16	350	b	b	b	b	260	250	360	350	360	370	370	380	370	350	350	270	270	240	260	250	c	b	b
17	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	320	300	310	b	a	340	b	b	a
18	a	a	260	260	260	270	1	500	400	530	330	330	320	320	300	1	310	310	c	c	290	a	a	a
19	c	290	270	290	250	270	280	370	300	320	340	330	310	c	c	c	c	270	270	260	240	250	250	290
20	c	320	c	300	260	240	220	250	260	290	310	310	270	c	c	c	c	290	260	240	230	250	260	270
21	290	320	b	b	b	250	370	b	400	350	370	490	420	350	240	320	330	330	240	c	270	270	280	a
22	280	280	260	260	250	240	330	370	320	340	330	310	290	330	290	320	280	1	250	260	250	300	a	a
23	a	350	270	c	260	b	g	620	500	350	380	360	390	450	320	390	340	260	c	270	270	a	a	a
24	340	a	b	b	250	350	1	450	370	330	320	320	330	360	370	390	c	c	c	c	c	c	c	c
25	c	c	b	b	a	240	420	360	350	340	390	340	350	300	320	320	320	300	280	300	320	b	a	a
26	a	a	c	c	c	240	220	380	c	c	370	350	340	350	370	320	300	300	270	250	290	270	240	a
27	a	b	250	250	220	250	420	400	400	410	370	350	340	380	360	350	350	320	230	250	c	c	c	c
28	c	c	c	c	300	240	c	c	c	c	c	c	c	300	280	300	300	260	230	260	260	270	350	a
29	a	b	a	a	a	a	360	400	360	350	340	300	390	330	350	300	320	400	330	250	b	b	c	c
30	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	340	320	320	280	260	270	280	280
Median	(295)	295	265	260	260	240	250	365	355	350	350	350	340	350	340	320	320	300	260	260	260	270	(265)	(280)
No.	6	10	10	11	15	19	21	22	22	23	24	26	27	25	25	24	25	24	15	16	16	10	8	5

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

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	290	300	250	260	300	320	300	310	320	310	310	300	310	310	310	300	c	300	s	a	320	c
2	350	330	290	c	270	250	260	300	300	280	310	310	310	350	300	320	330	290	250	280	370	b	b	a
3	a	a	a	330	a	c	c	330	340	340	420	380	350	380	b	g	g	280	330	a	b	a	a	c
4	c	c	330	300	310	b	g	g	b	b	g	g	g	360	380	f	f	a	c	c	b	a	a	420
5	a	a	b	b	300	300	290	300	320	350	340	320	320	330	350	310	320	340	b	c	c	c	b	350
6	330	310	310	310	290	300	300	330	g	g	g	g	340	330	350	310	330	350	280	250	b	b	b	b
7	b	b	b	b	b	b	b	b	g	g	g	g	g	390	380	(350)	320	c	c	320	b	b	b	b
8	b	320	b	b	330	320	280	c	c	c	c	g	g	g	g	g	350	330	c	300	300	320	b	b
9	c	c	c	300	270	260	250	280	260	280	270	300	300	290	330	320	c	330	c	350	350	b	b	b
10	b	b	b	b	b	c	240	g	g	g	g	g	g	g	g	320	340	320	c	300	320	300	290	320
11	320	330	c	c	c	300	280	270	260	300	290	280	300	300	300	330	310	310	b	b	b	b	b	b
12	b	b	b	b	b	280	290	300	340	320	340	350	350	b	340	310	340	380	b	b	b	b	b	b
13	b	b	b	b	320	300	g	g	g	g	c	g	g	g	g	400	330	b	b	c	b	b	b	b
14	b	380	a	b	b	b	b	g	g	g	g	g	g	390	360	400	320	g	a	c	a	370	380	b
15	b	b	b	b	b	b	b	b	b	b	b	b	310	340	360	340	270	360	c	b	b	b	b	b
16	370	b	b	b	300	300	320	g	350	g	g	g	g	g	350	350	300	280	310	290	280	c	b	b
17	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	320	320	340	b	350	350	b	b	360
18	350	340	300	320	290	270	280	g	g	g	g	330	320	320	310	360	320	330	c	c	300	330	a	a
19	c	320	320	310	270	270	280	370	300	320	340	330	310	c	c	c	c	280	320	320	280	300	300	320
20	c	340	c	310	270	260	250	250	260	290	310	320	280	c	c	c	c	320	290	300	300	300	320	320
21	320	340	350	b	b	320	g	b	g	g	g	g	g	350	340	320	330	330	310	c	320	310	320	340
22	320	330	300	290	280	250	g	g	320	g	330	310	290	330	300	330	300	330	290	320	330	360	a	a
23	a	350	280	c	280	b	g	g	g	g	g	g	g	g	320	390	340	290	c	300	310	a	a	a
24	360	a	b	b	260	g	300	g	g	330	320	g	330	g	g	390	c	c	c	c	c	c	c	c
25	c	c	b	b	350	270	g	g	350	340	g	g	350	320	330	330	320	320	320	320	320	b	a	a
26	a	a	c	c	c	260	290	g	c	c	370	350	340	350	370	320	310	320	300	330	350	330	290	a
27	a	b	280	290	300	300	g	g	g	g	g	g	340	g	g	350	350	330	330	290	c	c	c	c
28	c	c	c	c	310	290	c	c	c	c	c	c	c	320	290	320	320	290	320	350	290	290	350	a
29	a	b	a	a	a	300	g	g	g	350	340	300	390	330	350	330	340	g	330	340	b	b	o	o
30	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	340	320	350	340	310	320	320	330
Median	(330)	330	300	305	290	290	300	g	350	350	395	380	340	350	350	330	320	325	315	320	315	320	(320)	(335)
No.	9	12	10	10	18	21	23	23	23	23	24	26	27	25	25	26	25	26	14	19	16	11	9	8

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T. MACQUARIE ISLAND hpF2. NOVEMBER 1951

HOURLY VALUES OF h'F1 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18
1	q	q	q	220	200	200	200	190	200	200	200	220	210	c
2	q	q	220	200	200	200	180	200	200	200	220	b	q	q
3	c	c	240	220	220	220	210	210	220	b	a	a	a	a
4	b	b	220	b	b	b	230	190	b	b	a	a	a	c
5	q	q	q	220	210	200h	220	200h	220	200h	200	200	250	b
6	q	q	210	200	200	220	220	200	200	200	210	220	420	q
7	b	b	b	230	220	220	220	210	220	200	a	a	c	c
8	q	q	c	c	c	c	200	200	210	200	b	230	c	c
9	q	220	190	200	210	200	180	200	180	200	220	c	a	c
10	q	q	210	220	220	220	210	200	200	200	200	200	220	c
11	q	q	210	200	200	200	a	200	200	210	200	200	200	q
12	q	q	230	210	210	200	200	220	b	b	210	240	230	b
13	q	230	250	210	220	c	220	200	200	200	200	200	b	b
14	b	b	270	240	220h	220	220	b	200	a	a	230	250	a
15	b	b	b	b	b	b	b	220	220	a	200	220	a	c
16	q	q	240	220	220	200	220	200	200	200	200	200	240	a
17	b	b	b	b	b	b	b	b	b	b	200	210	260	b
18	240	220	b	b	220	220	190	200	200	200	200	220	250	c
19	230	210	220	200	200	190	180	180	c	c	c	c	220	a
20	q	q	200	180	170h	180	220	200	c	c	c	c	a	230
21	q	250	b	220	220	b	220	320	200	220	220	220	230	q
22	q	200	200	180	210	200	200	210	200	180	180	200	220	230
23	b	260	240	220	200	220	200	200	200	200	210	220	240	c
24	250	230	210	b	210	200	210	210	200	200	200	c	c	c
25	q	200	210	200	210	190	200	190h	200	200	190	a	a	250
26	q	q	220	c	c	b	240	190	180	180	190	200	220	240
27	q	240	a	200	200	190	180	190	200	190	200	220	210	q
28	q	c	c	c	c	c	c	c	170h	200	190	190	210	q
29	q	a	230	220	210h	220	200	190h	200	200	200	230	230	220
30	c	c	c	c	c	c	c	c	c	c	c	170h	220	a
Median	*	225	220	210	210	200	210	200	200	200	200	220	230	230
No.		10	19	21	23	21	25	26	24	21	22	21	19	5

Sweep: 1.0- 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF h'E OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
I	e	100	100	100	100	100	a	100	a	100	100	100	100	100	c	
2	e	120	100	100	100	100	100	100	100	100	100	100	b	a	e	
3	e	c	c	a	100	100	100	100	100	100	b	a	a	a	a	
4	b	b	b	100	b	b	b	b	100	b	b	a	a	a	c	
5	e	e	a	100	100	100	100	100	100	100	100	100	100	a	b	
6	e	b	b	b	100	b	b	100	a	100	100	100	100	b	a	
7	e	b	b	b	b	b	b	b	100	a	100	a	a	c	c	
8	e	e	a	c	c	c	c	b	100	b	b	b	b	110	c	
9	e	a	100	110	100	100	100	100	100	100	100	100	c	a	c	
10	b	a	a	a	100	a	a	100	100	a	a	a	a	a	c	
11	e	e	100	100	100	100	100	100	100	100	100	100	100	100	a	
12	b	110	100	100	a	100	100	100	a	b	b	100	100	100	b	
13	c	100	100	100	c	c	c	b	100	100	b	100	100	b	a	
14	b	b	b	b	b	100	100	100	b	b	a	a	100	110	a	
15	b	b	b	b	b	b	b	b	b	b	a	100	a	a	c	
16	b	b	b	b	100	100	100	b	b	b	b	b	c	b	a	
17	b	b	b	b	b	b	b	b	b	b	b	100	a	100	b	
18	b	100	b	b	b	b	100	100	100	100	100	100	100	a	c	
19	e	100	100	a	100	100	100	100	100	c	c	c	c	100	a	
20	e	a	a	100	100	a	a	100	a	c	c	c	c	a	a	
21	a	b	a	b	b	a	b	b	b	100	100	100	110	110	a	
22	a	100	100	b	a	100	100	a	100	100	100	100	100	100	100	120
23	a	b	a	100	100	100	100	a	100	100	100	b	b	b	c	
24	a	100	b	b	b	100	100	100	a	100	a	100	c	c	c	
25	a	100	100	100	100	100	100	100	100	100	100	100	b	b	b	
26	c	100h	100	100	c	c	b	b	b	100	100	100	100	100h	c	
27	a	100h	b	a	100	100	100	a	100	a	100	100	100	100	110	110
28	a	100	c	c	c	c	c	c	c	a	a	100	100	a	100	
29	e	b	b	b	a	100	b	b	a	a	a	100	100	100	100	
30	c	c	c	c	c	c	c	c	c	c	c	c	100	a	a	
Median	E	100	100	100	100	100	100	100	100	100	100	100	100	100	100	*
No.	12	15	10	12	14	16	15	15	16	15	14	19	15	12	5	

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF h'Es OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

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	100	100	e	e	g	g	g	g	100	100	100	100	100	g	g	s	s	g	c	120	110	100	110	c
2	100	110	120	e	g	g	g	100	g	g	g	120	120	g	g	g	b	100	100	100	100	100	100	100
3	100	100	100	100	100	c	c	100	130	130	120	g	g	g	b	100	100	100	110	110	100	100	100	c
4	c	c	100	110	b	b	b	g	b	b	b	b	g	b	b	100	100	100	c	c	100	100	100	100
5	100	100	90	90	100	100	100	120	120	120	100	100	g	g	g	140	130	100	b	c	c	c	100	100
6	100	120	100	100	100	b	b	b	120	b	b	g	100	g	g	g	c	b	100	120	b	b	b	b
7	b	100	b	b	100	b	b	b	b	b	b	b	g	100	120	100	100	c	c	100	b	100	100	b
8	b	100	100	b	100	100	100	c	c	c	c	b	b	b	b	b	130	110	c	100	100	120	100	b
9	c	c	c	100	g	100	c	c	g	g	g	g	g	g	g	g	c	100	c	110	110	100	b	100
10	100	b	100	100	b	100	100	100	100	100	100	g	g	100	100	100	100	100	c	110	100	100	100	100
11	100	e	e	e	100	100	c	c	c	120	120	110	140	120	g	g	g	c	110	120	b	b	140	120
12	100	b	100	b	b	130	b	c	100	110	110	110	110	b	b	140	150	c	b	b	b	b	b	b
13	b	100	b	100	100	c	130	120	120	110	c	g	g	100	g	g	c	b	120	c	b	100	100	100
14	100	90	90	90	b	b	b	120	100	110	120	g	b	b	120	100	g	g	100	c	100	100	100	b
15	80	b	90	100	b	b	b	b	b	b	b	b	b	b	110	130	120	100	c	b	b	100	100	b
16	120	b	b	b	b	b	100	b	120	120	150	b	b	b	110	g	c	120	110	120	110	c	100	b
17	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	g	100	100	b	110	100	100	100	100
18	100	100	e	e	b	g	120	b	b	b	100	110	110	g	110	g	120	100	c	c	100	110	100	100
19	c	100	e	e	100	110	g	100	110	g	120	120	g	c	c	c	c	120	110	110	100	140	100	130
20	c	100	c	120	110	100	100	g	g	100	100	100	100	c	c	c	c	110	110	110	100	130	e	130
21	120	100	100	100	100	100	100	b	b	100	b	b	b	g	120	120	120	120	110	c	110	110	100	100
22	130	e	150	e	100	100	g	b	100	100	100	100	g	g	g	g	140	110	110	120	120	110	100	100
23	100	100	120	c	120	b	100	100	100	g	g	110	110	g	g	b	b	b	c	120	100	100	100	100
24	110	100	110	100	100	100	b	b	b	110	110	g	100	g	100	120	c	c	c	c	c	c	c	c
25	c	c	100	100	100	100	100	g	g	g	g	g	g	100	100	g	120	120	120	100	100	b	100	100
26	100	100	c	c	c	g	100	100	c	c	b	b	b	g	g	g	g	120	c	120	120	140	100	100
27	80	90	90	90	90	100	b	100	g	g	110	100	100	100	g	g	g	g	130	110	c	c	c	c
28	c	c	c	c	100	100	c	c	c	c	c	c	c	100	100	120	100	110	110	120	120	b	100	100
29	100	b	100	100	100	b	b	b	100	g	b	b	100	100	100	100	100	100	120	100	b	b	c	c
30	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	100	120	130	100	100	100
Median	100	100	100	100	100	100	100	100	100	110	110	110	100	100	110	110	110	100	110	110	100	100	100	100
No.	19	17	17	15	17	14	11	10	13	13	14	11	11	8	11	12	16	20	16	21	20	20	23	18

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

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	3.0	3.0	3.1	3.0	3.4	3.4	3.2	3.0	3.1	3.1	3.0	3.1	3.1	3.2	3.0	3.1	3.1	3.2	c	3.1	s	a	2.8	c
2	2.9	3.0	3.2	c	3.2	3.3	3.4	3.1	3.2	3.2	3.1	3.1	3.1	2.9	3.1	3.0	2.9	3.2	3.5	3.3	2.8	b	b	a
3	a	a	a	2.9	3.2	c	c	3.0	3.1	3.0	2.7	2.8	2.8	2.7	b	2.9	2.8	3.3	2.9	a	b	a	a	c
4	c	c	3.1	3.1	3.0	b	3.0	2.6	b	b	2.6	2.8	2.8	2.8	2.8	f	f	a	c	c	b	2.5	a	2.5
5	a	a	b	b	3.1	3.1	3.2	3.1	3.0	3.0	3.0	3.1	3.0	3.0	2.8	3.1	3.1	2.9	b	c	c	c	b	2.9
6	3.0	3.0	3.0	3.0	3.2	3.0	3.2	3.0	3.0	2.9	2.9	2.9	3.0	3.0	2.9	3.1	3.0	2.9	3.2	3.2	b	b	b	b
7	b	b	b	b	b	b	b	b	2.6	2.7	2.7	2.8	2.5	2.8	2.7	(3.0)	3.0	c	c	2.9	b	b	b	b
8	b	3.0	b	b	3.0	3.0	3.1	c	c	c	c	2.6	2.7	2.8	2.9	2.9	3.0	3.0	c	3.1	3.1	3.0	b	b
9	c	c	c	3.1	3.4	3.4	3.4	3.5	3.4	3.3	3.4	3.3	3.1	3.3	3.1	2.9	c	2.9	c	3.0	2.9	b	b	b
10	b	b	b	b	b	3.3	3.5	2.9	2.7	2.6	2.6	2.4	3.0	2.8	2.9	3.1	3.0	3.1	c	3.2	3.0	3.1	3.0	3.0
11	3.0	3.0	2.9	3.0	3.3	3.1	3.3	3.3	3.4	3.3	3.2	3.3	3.3	3.2	3.1	3.0	3.0	3.0	b	b	b	b	b	b
12	b	b	b	b	b	3.3	3.3	3.2	3.0	3.2	3.0	2.9	2.8	b	3.0	3.1	2.9	2.7	3.0	b	b	b	b	b
13	b	b	b	b	3.1	3.1	2.7	2.5	2.7	2.3	c	2.7	2.8	2.9	2.7	2.8	3.1	b	b	c	b	b	b	b
14	b	3.7	a	b	b	b	b	2.8	g	g	2.3	2.5	2.4	2.7	2.9	2.7	3.2	2.6	a	c	2.6	2.8	2.9	b
15	b	b	b	b	b	b	b	b	b	b	b	b	3.0	2.8	2.9	2.9	3.4	2.9	c	2.9	b	b	b	b
16	2.8	b	2.8	b	3.1	3.1	3.1	2.8	3.0	3.1	3.0	2.9	2.9	2.9	3.0	2.9	3.0	3.2	3.0	3.2	3.2	c	b	b
17	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	3.0	3.0	3.0	b	3.0	2.8	b	b	3.0
18	2.9	3.1	3.0	3.0	3.2	3.4	3.1	2.5	2.9	2.5	3.2	3.0	3.0	3.1	3.1	2.9	3.0	3.1	c	c	3.0	2.9	a	a
19	c	3.0	3.0	3.1	3.4	3.5	3.3	3.3	3.3	3.1	3.0	3.0	3.1	c	c	c	c	3.2	3.1	3.0	3.1	3.1	3.0	3.0
20	c	3.0	c	3.0	3.3	3.5	3.5	3.3	3.6	3.3	3.1	3.0	3.2	c	c	c	c	3.1	3.1	3.1	3.2	3.1	3.0	3.0
21	2.8	2.9	2.8	b	2.7	3.0	3.1	2.9	2.9	3.1	3.1	2.6	2.7	3.0	3.0	3.0	3.0	3.0	2.9	c	3.0	3.0	3.0	3.0
22	2.9	3.0	3.1	3.2	3.3	3.5	3.3	3.0	3.3	3.1	3.1	3.2	3.2	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	2.9	a	a
23	a	3.1	3.0	c	3.1	b	g	2.2	2.7	3.1	3.0	3.0	2.9	2.7	3.2	2.9	3.0	3.1	c	3.2	3.1	a	a	3.1
24	2.9	a	b	b	3.4	3.1	3.4	2.7	3.0	3.1	3.0	2.8	3.1	2.9	2.9	2.9	c	c	c	c	c	c	c	c
25	c	c	b	b	2.8	3.2	2.9	2.9	3.0	3.1	2.8	3.1	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.0	3.1	b	a	a
26	a	a	c	c	c	3.4	3.2	3.0	c	c	3.0	3.1	3.0	3.0	2.9	3.0	3.0	3.0	3.1	2.9	2.8	2.9	3.1	a
27	2.8	b	2.7	3.2	3.1	3.1	2.8	2.9	2.9	2.9	3.0	3.0	3.0	2.9	3.0	3.0	2.9	3.0	3.0	3.0	c	c	c	c
28	c	c	c	c	3.1	3.1	c	c	c	c	c	c	c	3.0	3.2	3.1	3.0	3.0	3.0	3.0	3.1	3.2	3.0	a
29	a	b	a	a	3.0	3.1	3.0	2.8	2.9	3.0	3.1	3.2	2.8	3.0	3.0	3.0	3.0	2.9	3.0	3.0	b	b	c	c
30	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.9	3.1	2.9	2.9	3.0	2.9	3.0	3.0
Median	2.9	3.0	3.0	3.0	3.2	3.2	3.2	3.0	3.0	3.1	3.0	3.0	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	(3.0)	(3.0)
No.	10	12	12	11	22	22	23	24	23	23	24	26	27	25	25	26	25	26	15	20	17	12	9	9

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF (M3000)F1 OBSERVED DURING NOVEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18
1	q	q	q	3.6	3.6	3.7	3.8	3.5	3.8	3.6	3.6	3.7	1	c
2	q	q	3.7	3.7	3.7	3.8	3.7	3.6	3.7	3.7	3.7	b	q	q
3	c	c	3.5	3.5	3.6	3.7	3.6	3.6	3.6	b	a	a	a	a
4	b	3.4	3.5	b	b	b	3.4	3.2	3.6	b	a	a	a	a
5	q	q	q	1	3.6	3.5	3.6	3.5	3.5	4.0	3.6	3.7	3.5	b
6	q	q	3.6	3.6	3.5	3.7	3.5	3.7	3.7	3.6	3.6	3.6	3.6	q
7	b	b	b	3.6	3.7	3.7	3.6	3.7	3.7	3.5	a	a	c	c
8	q	q	c	c	c	c	3.8	3.8	3.7	3.7	3.5	3.5	3.5	c
9	q	1	3.7	3.5	3.6	3.6	3.8	3.8	3.9	3.5	3.6	c	a	c
10	q	q	3.5	3.7	3.6	3.8	3.5	3.7	3.7	3.8	3.5	3.6	3.6	c
11	q	q	3.6	3.9	3.8	4.1	a	3.6	3.8	3.6	1	1	1	q
12	q	q	3.7	3.7	3.7	3.5	3.6	3.7	b	b	3.7	3.7	3.4	b
13	q	3.3	3.3	3.7	3.8	c	3.6	3.7	3.7	3.8	3.5	3.6	b	b
14	b	b	3.4	3.4	3.6	3.7	3.8	3.6	4.0	a	3.6	3.6	3.3	a
15	b	b	b	b	b	b	b	3.7	3.6	3.6	3.4	3.8	a	c
16	q	q	3.4	3.5	3.7	3.8	3.7	3.6	3.8	3.7	3.6	3.7	1	a
17	b	b	b	b	b	b	b	b	b	b	3.6	3.6	1	b
18	3.7	1	b	3.5	3.8	3.6	3.7	3.7	3.8	3.7	3.6	3.6	3.6	c
19	1	3.7	3.8	3.8	3.8	3.8	3.9	3.9	c	c	c	c	1	1
20	q	q	3.8	3.8	3.8	3.8	3.6	3.7	c	c	c	c	a	1
21	q	3.5	b	3.6	3.7	b	3.6	3.7	3.6	3.6	3.6	3.6	3.4	q
22	q	3.5	3.6	3.4	3.7	3.6	3.6	3.6	3.7	3.7	3.7	3.8	1	1
23	b	3.4	3.6	3.7	3.6	3.6	3.7	3.8	3.7	3.7	3.7	3.6	3.8	c
24	3.4	1	3.5	3.4	3.7	3.7	3.7	3.7	3.8	3.7	3.7	c	c	c
25	q	3.5	3.7	3.7	3.7	3.5	3.7	3.7	3.6	3.8	3.7	3.6	1	1
26	q	q	3.5	c	c	b	3.6	3.7	3.8	3.7	3.7	3.6	3.7	1
27	q	3.4	3.4	3.7	3.7	3.8	3.8	3.7	3.6	3.7	3.7	3.5	3.6	q
28	q	c	c	c	c	c	c	c	3.5	3.8	3.6	3.5	1	q
29	q	3.6	3.5	3.5	3.7	3.7	3.8	3.7	3.8	3.6	3.7	3.4	3.5	3.3
30	c	c	c	c	c	c	c	c	c	c	c	3.6	3.5	a
Median	*	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.5	*
No.		9	20	22	23	21	25	27	25	22	23	21	13	

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF f°F2 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11
1	a	c	c	c	c	c	c	c	c	c	c	c
2	4.7	a	a	4.0	4.4	4.9z	5.3	5.7	6.0	6.6	6.2	6.6
3	b	b	b	b	b	c	4.6	c	c	c	5.4	5.3
4	c	c	c	c	c	c	4.8	5.2	5.6	6.2z	6.2z	6.1z
5	a	b	b	3.0	b	b	3.8	g	b	c	c	c
6	b	3.7	3.7	3.8f	c	c	c	c	c	c	c	c
7	4.8f	4.0	3.5f	3.5z	4.0	4.5z	4.9	5.5	5.9	5.6z	5.9z	6.1z
8	a	b	b	4.3	4.8	4.8f	4.8f	5.3f	5.7	5.9	5.5	5.9
9	b	3.9	b	b	3.3	b	b	g	g	4.6	4.9	b
10	b	b	b	b	b	b	b	g	4.3	4.5	4.5	4.8
11	4.8	b	b	b	3.8	b	5.1	5.3	5.5z	5.9	6.0	6.4
12	c	c	c	c	3.8	4.1f	4.5	4.4	4.5	4.7	5.0	5.2
13	b	4.9f	4.3	4.3	4.1	4.5z	5.1	5.3	5.9	6.0z	6.4	6.2
14	4.8	5.0f	4.3	4.0	4.3z	4.7	5.4	5.4	5.9z	6.0v	6.3	6.5
15	4.7f	f	2.8f	3.3	3.3z	4.2v	4.8	5.0	5.5	b	6.1	6.0
16	c	c	c	c	c	c	c	c	c	c	c	c
17	3.8	c	c	c	c	c	c	c	c	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c
19	b	c	c	c	c	b	c	c	c	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c
21	4.3	4.1	4.0	3.2f	4.2	4.3	5.0	5.5z	5.8z	5.8z	6.3	6.3
22	c	c	c	c	3.7	4.6z	c	6.0	c	6.0z	6.4	c
23	b	b	b	b	b	b	b	g	b	g	g	4.9
24	4.5	4.0	c	c	c	4.3z	5.4v	c	c	c	c	c
25	c	c	c	c	c	c	c	c	c	c	c	c
26	4.7f	f	f	(3.1)f	3.5	4.3	4.7	5.6v	6.0	6.4v	6.1z	6.4
27	f	4.7f	4.5f	4.0f	4.5f	5.4	5.4z	5.9	6.7	6.6	6.4	6.8
28	c	c	c	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	c	c	c	c	c	4.7
30	a	a	3.5f	3.8f	3.8f	4.0z	5.2	5.7	6.3	6.9	7.1	6.5
31	c	c	c	c	c	c	c	c	c	c	c	c
Median	(4.7)	(4.0)	(3.8)	3.8	3.9	4.5	5.0	5.3	5.8	6.0	6.1	6.1
No.	9	8	8	12	14	13	16	18	15	16	18	17

Sweep: 1.0 – 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T. MACQUARIE ISLAND f°F2, DECEMBER 1951

HOURLY VALUES OF $f^{o}F2$ OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	12	13	14	15	16	17	18	19	20	21	22	23
1	c	c	c	6.3	c	8.0	c	5.5	5.5	a	a	b
2	6.8	6.6	6.8	6.5	6.7	4.9f	c	5.3	b	b	b	b
3	5.9	5.9	5.7	5.6f	5.8f	5.5f	5.6f	5.1	a	c	c	c
4	5.9	6.5	6.2	6.5	c	c	c	c	a	a	a	a
5	c	5.3	c	c	c	6.2	c	5.3f	4.5	a	c	b
6	c	c	c	c	c	6.5	c	7.6	6.6	5.9	6.0	5.0
7	6.3z	6.5z	6.5z	6.5z	6.6z	6.5	6.8	7.2	6.8	5.0f	b	b
8	6.2	6.5	6.4	7.5	6.7	5.2	a	4.5f	b	b	b	4.7f
9	5.3v	5.4v	5.7	6.4	7.4	7.0	6.6	4.8	b	3.8	b	b
10	5.0	5.1	5.2	5.2v	5.8	5.8f	4.5	b	4.7	b	b	b
11	6.4z	6.7	7.5	7.3	c	c	c	c	5.4	c	c	c
12	5.3	5.4	5.2	5.8	6.2	6.6	6.2	4.9	c	4.7	4.8f	4.7
13	6.6	6.4	6.5	7.2	c	c	c	c	c	c	3.8f	3.8
14	6.6	6.6	6.8	7.2	7.0	7.0	c	4.8	c	c	4.9	4.5
15	6.5	6.0	5.9	5.8	5.4	c	6.0	4.9	4.5	c	c	c
16	c	5.4	5.5	5.6	5.7	6.5	6.5	4.9	4.5	3.8	a	3.7
17	c	c	c	c	c	c	c	c	5.9	c	c	c
18	c	c	c	c	c	c	c	c	c	c	a	a
19	c	5.7	5.8z	6.4	6.3	6.4f	c	5.0	b	c	c	c
20	c	c	c	c	c	6.2	c	c	c	c	4.4	4.0
21	6.0z	6.2z	c	6.2z	c	c	c	c	c	c	c	c
22	c	c	c	c	7.9	7.5	5.5f	5.1	5.0	b	b	4.2
23	4.9	5.0	5.2f	f	5.2	5.4	6.0	5.5	b	c	c	4.5
24	5.9	c	c	c	c	c	c	7.2	6.2	5.8	5.5f	c
25	c	c	c	c	c	c	7.1	6.8	c	c	c	c
26	6.4z	6.4z	6.4z	6.5	6.6z	6.8	c	c	c	(6.5)f	6.5f	4.5
27	6.6z	6.4z	6.8	6.9	7.6	7.7	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	c	a	a
29	4.8	5.0	5.2f	5.2f	4.9	5.4	5.1	4.7	4.6	4.1f	4.5	a
30	6.4	6.8	6.6	6.5	6.4	6.8	c	7.5	c	c	c	c
31	6.8	c	c	c	c	5.2f	c	c	c	c	a	3.5
Median	6.2	6.2	6.2	6.4	6.4	6.5	6.0	5.1	5.2	(4.8)	(4.8)	4.5
No.	20	21	19	20	17	21	11	19	12	8	8	11

Sweep: 1.0 - 13.0 Mc/s in $1^{m}55^{s}$ Time used: 157.5°E.M.T. MACQUARIE ISLAND $f^{o}F2$, DECEMBER 1951

HOURLY VALUES OF f°F1 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	c	c	c	c	c	c	c	c	4.5	c	4.2	c	q
2	q	q	4.5	4.6	4.7	4.6	4.7	4.7	4.7	4.6	4.5	b	4.0	c	q
3	c	a	c	c	c	4.3h	4.8h	4.5	4.5	4.4	4.4f	3.9f	4.1	a	q
4	c	c	4.2	4.5	4.7h	4.7	4.6	4.7	4.8	4.7h	4.5	c	c	c	c
5	b	3.6	3.9	b	c	c	c	c	4.4	c	c	c	4.0	c	q
6	c	c	c	c	c	c	c	c	c	c	c	c	4.2	c	q
7	q	4.2	4.3	4.5	4.7	4.7	4.7	4.7	4.7	4.7	4.5	4.4	4.1	3.7	q
8	q	4.1	4.4	4.4	4.3h	4.5h	4.7	4.7	4.5	4.6	4.6	4.4	a	a	a
9	b	b	4.0	4.0	4.2	4.4	b	4.5h	4.5	4.5h	4.5	4.2	4.0	a	a
10	b	b	3.9	4.1	4.2	4.3	4.4	4.4	4.4h	4.4	4.2	4.2	3.8	3.5	b
11	b	4.1	4.2	4.3	4.4	4.5	4.5	4.6	4.6	4.5	4.4	c	c	c	c
12	a	3.8	4.0	4.2	4.2	4.3	4.4	4.4	4.5	4.5	4.3	4.2	4.0	a	a
13	q	4.0	4.2	4.3	4.6	4.7	4.7	4.7	4.6	4.6	4.6	c	c	c	c
14	q	3.9	4.3	4.4	4.5	4.6	4.6	4.7	4.6	4.7	4.5	4.3	4.2	c	3.2
15	q	4.0	4.2	4.5	b	4.6	4.6	4.6	4.5	4.4	4.5	4.4	c	3.8	3.0
16	c	c	c	c	c	c	c	c	4.5	4.5	4.4	4.3	4.0	3.7	3.1
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	b	c	c	c	c	c	c	c	4.6	4.6h	4.6	4.2	4.0	c	3.4
20	c	c	c	c	c	c	c	c	c	c	c	c	4.2	c	c
21	b	b	4.4	4.5	4.7	4.6	4.7	4.8	4.7	c	4.6	c	c	c	c
22	q	c	4.3	c	4.7	4.7	c	c	c	c	c	4.5h	4.4	3.8	3.3
23	b	b	3.8	b	4.1	4.4h	4.5h	4.5	4.5	4.5f	4.5	4.2	4.4	3.8	a
24	q	1	c	c	c	c	c	4.8	c	c	c	c	c	c	q
25	c	c	c	c	c	c	c	c	c	c	c	c	c	4.0	a
26	3.6	1	4.2	4.5	4.7	4.8h	5.0h	4.8	4.8	4.8	4.7	4.6	4.3	c	c
27	3.4	4.2	4.4	4.5	4.8h	4.7	4.8	4.8	4.8	4.7	4.8	4.5	4.3	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	4.4	4.4	4.5	4.6	4.5	4.5	4.0	3.7	a
30	q	4.0	4.2	4.4	4.6	4.7	4.7	4.7	4.7	4.7	4.6	4.3	4.2	c	q
31	c	c	c	c	c	c	c	4.7	c	c	c	c	a	c	c
Median	*	4.0	4.2	4.4	4.6	4.6	4.7	4.7	4.6	4.6	4.5	4.4	4.1	3.8	3.2
No.		10	18	15	16	18	17	20	21	19	21	16	19	8	5

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF foE OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Day \ Hour	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	c	c	c	c	c	c	c	c	c	3.2	c	a	c	
2	a	2.5	2.8	3.0	3.4	3.3	a	3.5	b	3.5	3.4	3.2	b	a	c	
3	a	c	a	c	c	c	3.3	a	3.5	a	3.4	3.2	b	a	a	
4	c	c	2.8h	2.9	a	a	3.3	3.3	3.3	a	a	3.2	c	c	c	
5	b	b	a	b	b	c	c	c	c	3.1	c	c	c	b	c	
6	c	c	c	c	c	c	c	c	c	c	c	c	c	2.8	c	
7	1.9	2.4h	a	3.0	3.3	3.3	3.4	3.4	a	a	a	a	2.9	a	2.3	
8	a	a	a	2.9f	3.2	a	3.3	3.4	3.4	3.4	3.4	h	a	a	a	
9	b	b	b	b	b	b	b	b	b	3.4	3.4	3.3	b	b	a	
10	b	b	b	b	a	3.2	3.3	3.3	3.4	3.3	3.3	a	a	a	a	
11	b	b	b	b	3.1	3.3	b	3.4	3.4	b	3.4	3.1	c	c	c	
12	a	a	a	a	3.0	3.1	3.2	a	a	a	a	a	3.0	a	a	
13	2.1h	2.3	2.6	2.8	3.1	3.2	3.3	3.4	3.4	3.5	3.3	3.2	c	c	c	
14	1.9	2.2	2.6	2.8	a	a	3.4	a	a	3.5	3.4	3.3	3.2	a	c	2.1
15	1.8f	2.3	a	a	a	b	b	b	b	b	a	c	a	c	a	
16	c	c	c	c	c	c	c	c	c	3.5	3.4	3.3	c	a	a	
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
19	c	b	c	c	c	c	c	c	c	a	a	3.3	a	a	c	
20	c	c	c	c	c	c	c	c	c	c	c	c	c	a	c	
21	a	b	b	3.0	3.2	3.3	3.4	3.4	a	3.5	c	c	c	c	c	
22	a	a	c	2.8	c	3.1	b	c	c	c	c	c	a	a	2.6	
23	a	b	b	b	b	b	a	a	3.5	3.4	a	a	a	a	a	
24	c	a	2.6	c	c	c	c	c	a	c	c	c	c	c	c	
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	
26	a	a	a	a	a	a	a	a	3.7	3.6	3.6	3.4	3.3	3.0	c	
27	a	a	a	a	a	a	a	a	a	a	a	a	3.2	2.9z	c	
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
29	c	c	c	c	c	c	c	b	b	b	3.3	a	a	a	a	
30	a	f	2.7	a	a	a	a	a	3.7h	a	3.5	3.3	3.1	2.8	c	2.1
31	c	c	c	c	c	c	c	c	a	c	c	c	c	a	c	
Median	*	2.3	2.6	2.9	3.2	3.2	3.3	3.4	3.4	3.5	3.4	3.2	3.2	*	*	*
No.		5	6	8	7	8	9	8	9	11	12	12	6			

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF fEs OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

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	6.0	c	c	c	c	c	c	c	c	c	c	c	c	c	c	g	c	5.3	c	4.8	3.8	5.8	5.7	5.1
2	5.1	5.7	5.2	4.7	4.7	2.9	g	3.2	4.0	4.3	4.0	g	b	g	3.8	g	3.8	4.7	c	4.7	b	b	5.7	4.7
3	5.5	6.0	5.8	5.9	4.7	c	4.3	c	c	c	3.4	4.1	g	3.6	g	g	3.6	5.0	6.2	4.1	5.8	c	c	c
4	c	c	c	c	c	c	3.2	4.7	5.5	5.0	6.3	4.7	4.1	3.5	3.5	3.5	c	c	c	c	9.4	5.0	5.5	4.7
5	5.4	5.7	5.7	5.1	b	b	4.0	b	b	c	c	c	c	g	c	c	c	5.9	c	3.5	5.2	4.8	c	5.6
6	4.7	3.3	2.8	D4.4	c	c	c	c	c	c	c	c	c	c	c	c	c	3.0	c	2.1	4.1	3.3	3.5	2.8
7	3.0	4.2	4.0	3.6	2.1	g	4.1	3.2	3.8	4.2	3.7	3.7	5.0	4.0	3.9	3.5	3.2	4.0	5.8	5.2	4.7	4.0	6.5	5.9
8	6.6	7.0	5.5	5.7	4.8	4.7	4.9	3.2	g	4.0	g	3.5	g	g	g	4.1	3.5	5.8	5.7	9.4	5.6	b	4.5	5.0
9	5.5	5.7	b	b	b	b	b	b	b	b	b	b	b	g	g	4.1	b	b	4.5	9.3	5.8	6.7	5.7	5.5
10	4.5	5.0	5.3	b	b	b	b	b	3.5	g	5.4	g	g	g	g	3.4	3.6	3.5	3.6	5.1	4.3	b	4.0	5.7
11	4.7	b	5.5	5.6	b	b	b	b	3.3	g	b	g	b	b	g	3.3	c	c	c	c	5.4	c	c	c
12	c	c	c	c	D4.0	4.0	3.3	3.6	3.1	3.3	g	4.0	3.8	3.4	3.3	3.4	4.1	4.0	5.2	5.3	c	5.3	4.8	5.3
13	3.9	4.0	3.1	2.0	4.0	2.8	3.5	3.1	3.3	5.4	5.0	3.6	3.5	g	3.4	3.4	c	c	c	c	c	c.	2.4	3.5
14	3.8	2.9	1.8	e	g	2.7	2.9	3.6	3.5	4.6	g	4.1	4.0	3.3	g	3.4	3.4	7.4	c	5.2	c	c	3.1	D3.0
15	3.2	e	1.5	e	g	g	3.0	3.4	3.3	b	b	b	3.5	b	3.5	c	7.5	c	5.7	5.7	6.0	c	c	c
16	c	c	c	c	c	c	c	c	c	c	c	c	c	g	g	g	c	3.5	3.3	2.5	c	3.3	4.9	4.0
17	3.1	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.1	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	5.4	D4.7
19	5.3	c	c	c	c	3.7	c	c	c	c	c	c	c	3.9	3.4	3.4	3.5	3.4	c	3.7	5.2	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	9.5	c	c	c	c	5.9	4.8
21	5.0	3.4	2.4	2.8	3.2	3.8	b	g	3.6	3.8	3.6	g	4.0	g	c	c	c	c	c	c	c	c	c	c
22	c	c	c	c	3.4	2.7	c	3.2	c	5.4	b	c	c	c	c	c	3.4	3.5	g	2.6	3.6	5.3	10.0	5.8
23	4.6	5.2	5.2	b	5.5	b	b	5.9	b	b	3.4	3.5	g	g	4.7	5.5	7.5	4.7	5.0	4.7	7.0	c	c	4.9
24	4.5	5.8	c	c	c	2.8	2.8	c	c	c	c	c	3.8	c	c	c	c	c	c	4.0	3.8	e	e	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	9.5	7.5	c	c	c	c
26	6.5	4.8	3.2	e	4.9	2.3	3.1	4.1	4.0	3.7	4.5	6.0	4.2	4.0	g	g	g	3.5	c	c	c	3.5	e	8.7
27	6.8	5.7	5.2	4.7	4.2	4.5	3.3	3.3	4.0	3.8	5.4	3.9	4.3	4.0	3.5	3.5	g	g	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	7.5	5.3
29	c	c	c	c	c	c	c	c	c	c	c	b	3.4	b	4.0	4.0	5.0	7.6	5.9	4.2	4.9	3.2	4.5	4.8
30	9.0	4.9	5.6	2.8	5.0	2.8	2.9	5.5	6.6	5.4	5.5	7.4	g	4.0	g	g	3.4	3.4	c	2.6	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	6.0	c	c	c	c	7.5	c	c	c	c	5.5	4.8
Median	5.0	5.0	5.2	4.0	4.1	2.8	3.2	3.4	3.6	4.1	3.8	3.7	3.8	3.3	3.3	3.4	3.5	4.4	5.4	4.7	5.2	4.4	5.2	4.9
No.	21	17	16	14	14	14	14	14	14	14	14	15	17	18	19	19	15	20	12	20	17	12	20	21

Sweep: 1.0-13.0 Mc/s in 1m55s

Time used: 150.5°E.M.T.

HOURLY VALUES OF M'F2 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	360	c	330	c	300	a	a	a	b
2	a	a	a	a	a	240	220	320	320	350	370	350	350	300	330	360	b	380	c	a	b	b	b	b
3	b	b	b	b	b	c	a	c	c	c	350	480	360	330	360	380	350	340	a	330	a	c	c	c
4	c	c	c	c	c	c	250	370	360	340	330	370	390	340	380	320	c	c	c	c	a	a	a	a
5	a	b	b	a	b	b	730	g	b	c	c	c	c	380	c	c	c	300	c	310	a	a	c	b
6	b	340	270	290	c	c	c	c	c	c	c	c	c	c	c	c	c	280	c	240	240	240	260	250
7	250	240	240	240	250	230	340	320	290	310	300	340	300	320	320	300	300	260	260	250	220	270	b	b
8	a	b	b	a	a	230	350	350	320	270	350	250	380	320	330	310	300	380	a	a	b	b	b	b
9	b	a	b	b	b	b	b	g	g	520	400	b	440	470	420	330	300	280	280	260	b	a	b	b
10	b	b	b	b	b	b	b	g	590	560	560	460	450	400	430	500	360	320	350	b	340	b	b	b
11	a	b	b	b	b	b	310	340	340	340	340	340	320	330	290	310	c	c	c	c	a	c	c	c
12	c	c	c	c	a	a	370	440	460	500	400	450	400	420	410	360	330	310	330	a	c	a	a	a
13	b	290	260	250	260	240	300	300	300	350	310	320	320	300	340	330	c	c	c	c	c	c	270	270
14	330	270	250	260	250	230	270	320	300	340	310	310	310	220	340	300	290	280	c	300	c	c	270	260
15	240	270	320	250	210	230	340	350	360	b	330	350	340	340	340	350	370	c	320	310	a	c	c	c
16	c	c	c	c	c	c	c	c	c	c	c	c	c	410	360	360	360	310	270	270	290	a	a	a
17	300	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	240	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
19	b	c	c	c	c	b	c	c	c	c	c	c	c	380	360	320	340	340	c	270	b	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	300	c	c	c	c	a	a
21	a	a	250	260	240	b	220	320	320	350	310	310	370	330	c	330	c	c	c	c	c	c	c	c
22	c	c	c	c	250	220	c	240	c	320	310	c	c	c	c	c	330	320	310	330	280	b	b	b
23	b	b	b	b	b	b	b	g	b	g	g	520	480	510	360	550	400	370	300	270	b	c	c	a
24	a	340	c	c	c	240	280	c	c	c	c	c	320	c	c	c	c	c	c	250	240	240	250	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	290	260	c	c	c	c
26	a	270	240	240	240	330	1	310	360	370	340	310	320	340	320	320	280	280	c	c	c	230	270	280
27	300	270	320	290	250	250	260	270	310	290	320	320	300	350	340	330	290	280	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
29	c	c	c	c	c	c	c	c	c	c	c	530	520	470	360	400	450	340	360	280	290	320	a	a
30	a	a	280	260	260	240	290	290	280	300	270	310	320	310	310	320	320	290	c	240	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	300	c	c	c	c	a	c	c	c	c	a	a
Median	(300)	(270)	(260)	(260)	(250)	230	295	330	320	345	335	340	345	340	340	330	330	310	305	270	(260)	(240)	(270)	*
No.	5	8	9	9	9	11	14	18	15	16	18	17	20	21	19	21	16	20	10	16	8	5	5	

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF hpF2 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	360	c	360	a	320	350	a	a	b
2	a	a	a	a	a	290	310	320	320	360	370	350	360	300	340	360	380	g	c	380	b	b	b	b
3	b	b	b	b	b	c	a	c	c	c	g	g	360	330	g	g	350	340	360	340	a	c	c	c
4	c	c	c	c	c	c	330	g	g	340	300	370	g	340	380	320	c	c	c	c	a	a	a	a
5	a	b	b	a	b	b	g	g	b	c	c	c	c	g	c	c	c	320	c	330	310	a	c	b
6	b	350	290	320	c	c	c	c	c	c	c	c	c	c	c	c	c	310	c	300	290	280	290	320
7	280	270	280	270	290	320	g	320	290	g	g	340	300	320	320	320	320	300	290	290	300	300	b	b
8	a	b	b	a	a	310	350	g	320	270	g	g	380	330	330	320	320	g	a	320	b	b	b	360
9	b	a	b	b	310	b	b	g	g	g	g	b	g	g	g	330	350	310	330	270	b	370	b	b
10	b	b	b	b	b	b	b	g	g	g	g	g	g	g	g	g	360	340	g	b	340	b	b	b
11	a	b	b	b	340	b	310	g	g	340	340	340	320	340	310	350	c	c	c	c	330	c	c	c
12	c	c	c	c	330	a	g	g	360	g	g	g	g	g	g	360	340	330	330	340	c	390	320	390
13	b	310	290	280	300	290	300	300	300	350	310	320	320	300	340	340	c	c	c	c	c	c	300	280
14	340	300	290	280	290	280	270	320	300	340	310	310	310	220	340	330	310	310	c	310	c	c	320	310
15	300	f	360	280	260	270	g	g	g	b	g	g	340	340	340	g	g	c	330	320	330	c	c	c
16	c	c	c	c	c	c	c	c	c	c	c	c	c	g	g	g	360	320	320	280	310	340	a	360
17	320	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	280	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
19	b	c	c	c	c	b	c	c	c	c	c	c	c	g	g	320	350	350	c	280	b	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	310	c	c	c	c	340	350
21	a	390	260	260	250	280	310	320	g	g	310	310	g	g	c	330	c	c	c	c	c	c	c	c
22	c	c	c	c	290	260	c	240	c	320	310	c	c	c	c	c	350	330	310	330	320	b	b	b
23	b	b	b	b	b	b	b	g	b	g	g	g	g	g	g	g	g	g	310	280	b	c	c	350
24	360	350	c	c	c	280	280	c	c	c	c	c	g	c	c	c	c	c	c	320	290	300	300	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	310	290	c	c	c	c
26	320	f	f	(250)	250	g	g	310	g	370	340	310	320	340	320	320	300	300	c	c	c	(300)	310	320
27	f	290	350	300	270	270	260	270	310	290	320	320	300	350	340	340	310	310	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
29	c	c	c	c	c	c	c	c	c	c	c	g	g	g	g	g	g	340	360	340	350	350	410	c
30	a	a	280	270	270	270	290	290	280	300	270	320	320	310	310	320	330	310	c	310	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	300	c	c	c	c	350	c	c	c	c	a	350
Median	(320)	(310)	(290)	(280)	290	280	310	320	360	355	355	350	360	340	340	340	350	330	330	320	315	(320)	(315)	350
No.	6	7	8	9	12	12	15	18	15	16	18	17	20	21	19	21	17	21	11	19	12	9	8	10

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 15h.5°E.M.T.

HOURLY VALUES OF h'F1 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	c	c	c	c	c	c	c	c	210	c	a	c	q
2	q	q	220	220	200	200	210	220	210	200	210	b	a	c	q
3	c	a	c	c	c	200h	200h	210	210	180	210	220	260	a	q
4	c	c	220	230	200h	200	200	180	200	190h	200	c	c	c	c
5	b	270	b	b	c	c	c	c	200	c	c	c	b	c	q
6	c	c	c	c	c	c	c	c	c	c	c	c	210	c	q
7	q	210	210	210	200	200	200	200	200	200	200	200	220	230	q
8	q	210	210	210	200h	180h	200	200	210	220	270	200	a	a	a
9	b	b	b	220	b	220	b	180h	200	200h	210	b	b	a	a
10	b	b	b	a	210	200	200	180	200h	220	220	b	230	a	b
11	b	b	220	210	210	b	200	200	200	200	200	c	c	c	c
12	a	250	240	220	200	210	200	190	200	200	200	220	220	a	a
13	q	220	220	200	200	200	180	180	180	190	200	c	c	c	c
14	q	220	220	210	200	200	190	200	200	200	210	210	230	c	260
15	q	220	210	200	b	b	b	220	b	210	210	220	c	220	a
16	c	c	c	c	c	c	c	c	210	220	210	200	210	220	240
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	b	c	c	c	c	c	c	c	220	180h	210	200	240	c	260
20	c	c	c	c	c	c	c	c	c	c	c	c	a	c	c
21	b	b	200	200	200	200	180	210	200	c	c	c	c	c	c
22	q	c	200	c	180	200	c	c	c	c	c	200h	200	240	280
23	b	b	b	b	b	150h	160h	210	200	200	210	200	220	a	a
24	q	220	c	c	c	c	c	180	c	c	c	c	c	c	q
25	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
26	210	210	210	190	200	200h	200h	210	190	200	200	230	220	c	c
27	230	220	210	200	200h	200	200	190	200	190	210	220	210	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	210	210	200	200	220	220	210	a	a
30	q	230	220	a	200	180	200	200	180	200	200	220	230	c	q
31	c	c	c	c	c	c	c	a	c	c	c	c	a	c	c
Median	*	220	215	210	200	200	200	200	200	200	210	215	220	*	*
No.		11	14	13	14	16	16	19	20	19	20	14	14		

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 150°E.M.T.

HOURLY VALUES OF h'E OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	c	c	c	c	c	c	c	c	c	100	c	a	c	
2	a	100	100	100	100	100	a	100	b	100	100	100	b	a	c	
3	a	c	a	c	c	c	100	a	100	a	100	100	b	a	a	
4	c	c	100h	100	a	a	100	100	100	a	a	100	c	c	c	
5	b	b	a	b	b	c	c	c	c	100	c	c	c	b	c	
6	c	c	c	c	c	c	c	c	c	c	c	c	c	100	c	
7	120	100h	a	b	100	100	100	100	a	a	a	a	100	a	100	
8	a	a	a	100	100	a	100	100	100	100	100	b	a	a	a	
9	b	b	b	b	b	b	b	b	b	100	100	100	b	b	a	
10	b	b	b	b	a	100	100	100	100	100	100	a	a	a	a	
11	b	b	b	b	100	100	b	100	b	b	100	100	c	c	c	
12	a	a	a	a	100	100	100	a	a	a	a	a	100	a	a	
13	120h	100	100	100	100	100	100	100	100	100	100	100	c	c	c	
14	120	110	100	100	a	a	100	a	a	100	100	100	100	a	c	
15	100	100	a	a	a	b	b	b	b	b	a	c	a	c	a	
16	c	c	c	c	c	c	c	c	c	100	100	100	c	a	a	
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
19	c	b	c	c	c	c	c	c	c	a	a	100	a	a	c	
20	c	c	c	c	c	c	c	c	c	c	c	c	c	a	c	
21	a	b	b	100	100	100	100	100	a	100	c	c	c	c	c	
22	a	a	c	100	c	100	b	c	c	c	c	c	a	a	100	
23	a	b	b	b	b	b	a	a	100	100	a	a	a	a	a	
24	c	a	100	c	c	c	c	c	a	c	c	c	c	c	c	
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	
26	a	a	a	a	a	a	a	a	100	100	100	100	100	100	c	
27	a	a	a	a	a	a	a	a	a	a	a	a	100	100	c	
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	
29	c	c	c	c	c	c	c	b	b	b	100	a	a	a	a	
30	a	f	100	a	a	a	a	a	100h	a	100	100	100	100	c	120
31	c	c	c	c	c	c	c	c	a	c	c	c	c	a	c	
Median	*	100	100	100	100	100	100	100	100	100	100	100	100	*	*	*
No.		5	6	7	7	8	9	8	8	11	12	12	6			

Sweep: 1.0 - 13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T. MACQUARIE ISLAND h'E, DECEMBER 1951 216.

HOURLY VALUES OF h'Es OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

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	100	c	c	c	c	c	c	c	c	c	c	c	c	c	c	g	c	100	c	100	110	100	100	100
2	100	100	100	90	100	120	g	130	110	110	100	g	b	g	150	g	100	100	c	110	b	b	100	100
3	100	100	100	100	100	c	100	c	c	c	100	100	g	100	g	g	120	100	100	120	100	c	c	c
4	c	c	c	c	c	c	140	120	100	100	110	110	110	100	100	130	c	c	c	c	100	100	100	100
5	100	100	100	100	b	b	100	b	b	c	c	c	c	g	c	c	c	110	c	100	100	100	c	100
6	90	100	100	100	c	c	c	c	c	c	c	c	c	c	c	c	c	130	c	110	100	100	100	100
7	100	100	100	110	120	g	100	120	120	110	110	100	100	100	100	100	140	100	110	100	100	120	100	100
8	100	90	100	90	90	100	90	140	g	100	g	100	g	g	g	150	100	100	100	100	100	b	80	90
9	90	100	b	b	b	b	b	b	b	b	b	b	b	g	g	140	b	b	100	100	90	90	90	100
10	90	90	90	b	b	b	b	b	100	g	100	g	g	g	g	100	100	110	100	100	100	b	90	90
11	90	b	80	80	b	b	b	b	120	g	b	g	b	b	g	100	c	c	c	c	100	c	c	c
12	c	c	c	c	100	100	100	100	140	120	g	100	100	100	100	100	100	100	100	100	c	100	100	100
13	90	100	100	100	100	120	110	110	120	110	100	110	110	g	100	100	c	c	c	c	c	c	110	130
14	100	100	110	o	g	140	130	120	100	100	g	100	100	100	g	100	130	100	c	110	c	c	120	100
15	100	e	100	o	g	g	100	100	100	b	b	b	100	b	100	c	100	c	100	100	100	c	c	c
16	c	c	c	c	c	c	c	c	c	c	c	c	c	g	g	g	c	100	100	110	c	110	100	100
17	100	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100
19	100	c	c	c	c	100	c	c	c	c	c	c	c	100	100	100	100	100	c	110	100	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	110	c	c	c	c	100	100
21	100	100	100	100	100	100	b	g	100	100	100	g	100	g	c	c	c	c	c	c	c	c	c	c
22	c	c	c	c	100	100	c	100	c	100	b	c	c	c	c	c	100	100	g	100	100	100	100	90
23	80	90	100	b	110	b	b	100	b	b	100	100	g	g	100	100	100	100	100	110	120	c	c	110
24	110	100	c	c	c	100	100	c	c	c	c	c	100	c	c	c	c	c	c	110	110	e	o	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	100	100	c	c	c	e
26	100	100	100	e	90	100	100	100	100	100	100	100	100	100	g	g	g	120	c	c	c	120	e	100
27	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	g	g	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	90	100
29	c	c	c	c	c	c	c	c	c	c	c	b	100	b	120	100	100	110	120	120	110	100	100	110
30	100	100	100	100	100	f	130	100	100	100	100	100	g	100	g	g	120	120	c	120	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	100	c	c	c	c	100	c	c	c	c	100	100
Median	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	105	100	100	100	100
No.	21	16	16	11	12	11	13	13	13	12	11	11	12	9	10	13	13	19	11	20	17	11	18	21

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF (M3000)F2 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

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	c	c	c	c	c	c	c	c	c	c	c	c	c	c	2.8	c	2.8	c	3.0	3.0	a	a	b
2	2.9	a	a	3.1	3.1	3.2	3.0	3.2	3.1	2.9	2.8	2.9	2.8	3.1	3.0	2.9	2.8	2.9	c	2.8	b	b	b	b
3	b	b	b	b	b	c	2.9	c	c	c	3.1	2.6	3.0	3.1	3.0	2.9	3.0	3.1	2.8	3.0	a	c	c	c
4	c	c	c	c	c	c	3.0	3.0	2.9	3.0	3.2	3.0	2.8	3.0	2.9	3.0	c	c	c	c	a	a	a	a
5	a	b	b	2.9	b	b	2.1	g	b	c	c	c	c	3.0	c	c	c	3.1	c	3.0	3.2	a	c	b
6	b	2.9	3.1	3.0	c	c	c	c	c	c	c	c	c	c	c	c	c	3.1	c	3.1	3.2	3.1	3.0	3.0
7	3.2	3.2	3.2	3.3	3.2	3.0	3.1	3.3	3.3	3.3	3.3	3.1	3.2	3.1	3.0	3.1	3.0	3.2	3.2	3.1	3.2	3.1	b	b
8	a	b	b	3.0	2.9	2.9	3.1	3.0	3.1	3.4	2.9	3.0	2.8	3.0	2.8	3.0	2.9	2.9	a	2.8	b	b	b	2.9
9	b	a	b	b	3.0	b	b	g	g	2.5	3.0	b	2.7	2.6	2.7	2.9	2.9	3.1	3.0	3.2	b	2.8	b	b
10	b	b	b	b	b	b	b	g	2.4	2.4	2.4	2.7	2.8	2.9	2.7	2.4	3.0	3.0	3.0	b	3.1	b	b	b
11	3.0	b	b	b	3.0	b	3.2	3.1	3.1	3.0	3.0	3.0	3.1	3.0	3.0	2.8	c	c	c	c	3.1	c	c	c
12	c	c	c	c	3.1	2.8	3.0	2.8	2.8	2.6	2.8	2.8	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1	c	2.8	3.1	2.9
13	b	3.1	3.1	3.2	3.2	3.2	3.3	3.2	3.2	3.0	3.1	3.2	3.1	3.2	2.9	3.0	c	c	c	c	c	c	3.1	3.1
14	3.0	3.1	3.1	3.3	3.3	3.2	3.3	3.2	3.2	3.0	3.2	3.2	3.1	3.1	2.9	2.9	3.0	3.0	c	3.1	c	c	3.0	3.1
15	2.9	f	3.3	3.2	3.3	3.3	3.2	3.1	3.0	b	3.2	3.1	3.0	3.0	3.0	3.2	2.9	c	3.0	3.1	3.1	c	c	c
16	c	c	c	c	c	c	c	c	c	c	c	c	c	2.8	3.1	3.0	2.9	3.0	3.0	3.2	3.2	3.1	a	2.8
17	3.1	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
19	b	c	c	c	c	b	c	c	c	c	c	c	c	2.9	3.0	3.0	2.8	2.8	c	3.3	b	c	c	c
20	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.0	c	c	c	c	2.9	2.8
21	3.0	2.7	3.3	3.5	3.5	3.3	3.1	3.1	3.3	3.0	3.2	3.2	2.9	3.1	c	3.0	c	c	c	c	c	c	c	c
22	c	c	c	c	3.3	3.3	c	3.6	c	3.1	3.2	c	c	c	c	c	2.9	2.9	3.0	2.8	3.0	b	b	2.8
23	b	b	b	b	b	b	b	g	b	g	g	2.6	2.6	2.5	3.2	f	2.9	2.9	3.1	3.2	b	c	c	2.7
24	2.8	3.0	c	c	c	3.2	3.4	c	c	c	c	c	3.2	c	c	c	c	c	c	3.0	3.3	3.1	2.9	c
25	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	3.0	3.2	c	c	c	c
26	3.0	f	f	(2.8)	3.1	3.1	3.1	3.2	3.0	2.9	3.1	3.2	3.1	3.1	3.1	3.0	3.0	3.1	c	c	c	(3.0)	3.0	3.0
27	f	3.1	2.7	2.9	3.3	3.2	3.1	3.3	2.9	3.2	3.0	3.1	3.2	3.0	3.0	2.9	3.0	3.0	c	c	c	c	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
29	c	c	c	c	c	c	c	c	c	c	c	2.6	2.6	2.6	3.1	2.9	2.7	3.0	2.9	3.0	3.0	2.8	2.6	a
30	a	a	3.2	3.3	3.1	3.2	3.3	3.3	3.3	3.2	3.3	3.0	3.0	3.1	3.2	3.0	2.9	3.0	c	3.0	c	c	c	c
31	c	c	c	c	c	c	c	c	c	c	c	c	3.1	c	c	c	c	2.9	c	c	c	c	a	3.0
Median	(3.0)	(3.1)	(3.2)	3.2	3.2	3.2	3.1	3.1	3.1	3.0	3.1	3.0	3.0	3.0	3.0	3.0	2.9	3.0	3.0	3.1	3.2	(3.0)	(3.0)	2.9
No.	9	7	8	12	14	13	16	18	15	16	18	17	20	21	19	20	17	21	11	19	12	8	8	11

Sweep: 1.0 - 13.0 Mc/s in 1m55s Time used: 157.5°E.M.T.

HOURLY VALUES OF (M3000)F1 OBSERVED DURING DECEMBER 1951 AT MACQUARIE ISLAND

Hour / Day	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
1	c	c	c	c	c	c	c	c	c	c	3.6	c	3.4	c	q
2	q	q	3.6	3.6	3.6	3.7	3.6	3.7	3.8	3.8	3.6	b	3.5	c	q
3	c	a	c	c	c	3.8	3.6	3.8	3.8	3.9	3.6	3.7	3.3	a	q
4	c	c	3.8	3.4	3.5	3.6	3.8	3.8	3.7	3.8	3.6	c	c	c	c
5	b	3.4	3.5	b	c	c	c	c	3.7	c	c	c	3.7	c	q
6	c	c	c	c	c	c	c	c	c	c	c	c	3.8	c	q
7	q	3.4	3.7	3.7	3.7	3.8	3.8	3.7	3.8	3.7	3.6	3.6	3.8	1	q
8	q	3.6	3.6	3.7	4.1	3.9	3.6	3.6	3.8	3.6	3.4	3.7	a	a	a
9	b	b	3.5	3.8	3.6	3.8	b	3.8	3.7	3.6	3.6	3.6	3.6	a	a
10	b	b	3.4	3.6	3.8	4.0	4.0	3.9	3.7	3.7	3.7	b	3.6	3.4	b
11	b	3.3	3.6	3.7	3.8	3.7	3.7	3.7	3.7	3.7	3.7	c	c	c	c
12	a	3.5	3.5	3.6	3.7	3.8	4.0	4.0	3.9	3.8	3.6	3.6	3.6	a	a
13	q	3.6	3.8	3.8	3.7	3.7	3.8	3.7	3.7	3.6	3.5	c	c	c	c
14	q	3.8	3.6	3.7	3.9	3.7	3.8	3.7	3.7	3.7	3.7	3.7	3.6	c	3.4
15	q	3.6	3.7	3.6	b	3.5	3.5	3.6	3.6	3.7	3.7	3.5	c	3.2	a
16	c	c	c	c	c	c	c	c	3.7	3.6	3.7	3.5	3.7	3.5	3.9
17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
18	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
19	b	c	c	c	c	c	c	c	3.7	3.7	3.6	3.9	3.5	c	3.6
20	c	c	c	c	c	c	c	c	c	c	c	c	3.7	c	c
21	b	b	3.6	3.7	3.7	3.7	3.8	3.6	3.6	c	3.7	c	c	c	c
22	q	c	3.9	c	3.7	3.7	c	c	c	c	c	3.6	3.6	3.4	3.2
23	b	b	3.5	b	3.6	3.7	3.7	3.8	3.6	3.8	3.7	3.8	3.4	a	a
24	q	1	c	c	c	c	c	3.7	c	c	c	c	c	c	q
25	c	c	c	c	c	c	c	c	c	c	c	c	c	a	a
26	3.6	1	3.7	3.8	3.7	3.7	3.6	3.8	3.7	3.6	3.6	3.7	3.7	c	c
27	3.6	3.9	3.8	3.7	3.7	3.8	3.7	3.8	3.8	3.7	3.5	3.7	3.7	c	c
28	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
29	c	c	c	c	c	c	3.7	3.6	3.7	3.6	3.5	3.5	3.6	3.6	a
30	q	3.7	3.7	3.6	3.9	3.9	4.0	4.0	4.0	3.8	3.7	3.6	3.7	c	q
31	c	c	c	c	c	c	c	3.7	c	c	c	c	a	c	c
Median	*	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.4	*
No.		10	18	15	16	18	17	20	21	19	21	15	19	5	

Sweep: 1.0-13.0 Mc/s in 1^m55^s Time used: 157.5°E.M.T.

HOURLY VALUES OF f0F2 OBSERVED DURING JANUARY 1952 AT MACQUARIE ISLAND

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11
1	b	b	b	b	b	b	b	g	b	b	g	g
2	4.2	4.4	3.9	3.2	3.8	3.9f	5.2	4.9f	6.2	5.7z	5.8z	c
3	4.5f	3.9f	3.7f	3.8f	3.8f	4.5f	4.7	6.0f	5.7f	6.0f	6.1f	6.5f
4	4.0	4.3f	4.6f	4.1f	3.9f	4.3f	4.3f	4.9f	5.8f	6.2f	6.3f	6.4f
5	a	a	a	b	4.5	4.1f	4.5	4.7	4.6	4.9	5.2	5.8
6	a	b	b	b	b	4.0	4.1	4.5	4.7	4.7	5.3	5.0
7	a	a	b	b	b	3.6	4.0	4.3f	4.8	4.8v	4.7v	4.8
8	b	b	b	b	b	4.1	4.6	f	5.3	5.4v	5.7	5.5
9	4.0f	s	3.4f	3.9f	3.7f	4.0f	4.5	4.6	5.2	5.2	5.5	5.4
10	s	s	(3.5)s	b	b	3.6f	g	g	4.2	g	g	5.1
11	b	b	a	b	b	b	3.8f	g	g	4.4	g	4.8
12	a	b	b	b	b	3.6	g	g	4.3	4.5	g	4.8
13	c	c	c	c	c	c	c	c	c	c	c	c
14	b	b	b	b	b	b	g	b	b	b	b	b
15	b	b	b	b	b	b	3.8	g	b	b	5.0	5.0f
16	b	b	b	b	b	b	b	4.0	g	g	g	g
17	(3.2)s	a	a	b	2.9	3.3f	4.2	5.0	c	c	c	5.6
18	3.8f	3.8f	3.1f	b	3.3	4.0	4.3	4.6f	(4.7)f	5.1f	5.0	5.3
19	3.8s	3.3f	f	2.3f	2.7f	3.4f	3.9fz	5.0f	f	5.4v	5.4f	5.3f
20	3.4s	b	3.8s	3.8s	(3.2)f	3.6f	4.3	4.7f	5.3f	5.2f	5.3f	5.5f
21	4.0s	(3.5)s	3.2f	3.4f	3.6f	4.0z	4.5	5.2f	5.6f	5.8	6.3	6.2
22	3.2s	2.7s	b	3.4s	3.2	3.5	4.3	4.7f	4.8f	(5.5)f	5.3f	5.6
23	a	s	s	2.6f	2.9	n	n	5.0	4.5	4.3	4.8f	4.6
24	a	b	a	b	b	b	b	3.8	4.4	g	g	g
25	b	b	b	b	b	g	4.0	4.5	4.8	4.6	4.8	5.0
26	a	a	a	2.6	b	3.4	4.0	4.4	4.6	4.7	4.8	4.8v
27	s	s	3.3	c	b	3.8	4.2	4.8	5.0	4.8	5.3	5.2
28	a	b	b	a	a	b	c	c	c	c	c	c
29	b	b	b	2.6	b	3.5	4.2	4.8	5.0f	5.4	5.4	5.3
30	a	b	b	b	b	b	b	b	b	b	g	g
31	b	3.3	2.4	2.5	2.5	3.4	4.1	4.1	c	c	4.8	4.8
Median	3.9	(3.6)	3.4	3.3	3.3	3.6	4.2	4.6	4.8	4.9	5.0	5.2
No.	10	8	10	12	13	21	24	26	22	23	27	27

Sweep: 1.0 - 13.0 Mc/s in 1m55s

Time used: 157.5°E.M.T.