

COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT

VOL. 15

No. 4

APRIL

1967

*Issued under the authority of the Hon. David Fairbairn,
Minister for National Development*

DEPARTMENT OF NATIONAL DEVELOPMENT

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The terminology used in this report is that accepted by international convention. All times are in Greenwich Mean Time. Should further information be required, explanation can be obtained by applying to:-

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CONTRIBUTING OBSERVATORIES

OBSERVATORY	OBSERVER IN CHARGE	GEOGRAPHIC		GEOMAGNETIC	
		LAT.	LONG.	LAT.	LONG.
GNANGARA	<i>I.B. Everingham</i>	31°47'S	115°57'E	-43.2°	185.8°
MACQUARIE I.	<i>J. Major</i>	54°30'S	158°57'E	-60.7°	243.0°
MAWSON	<i>V. Dent</i>	67°36'S	62°53'E	-73.2°	103.1°
PORT MORESBY	<i>D. Denham</i>	9°24'S	147°09'E	-18.7°	218.0°
TOOLANGI	<i>C.A. van der Waal</i>	37°32'S	145°28'E	-46.7°	220.8°

MAGNETOGRAPHS

OBSERVATORY	TYPE	NOMINAL SCALE VALUES								
		NORMAL			INSENSITIVE			RAPID RUN		
		D	H	Z	D	H	Z	D	H	Z
GNANGARA	<i>Eschenhagen</i>	1.1	2.5	5.3						
MACQUARIE I.	<i>La Cour</i>	2.4	25	21				1.0	5.4	6.1
MAWSON	<i>La Cour</i>	0.9	9.6	9.7	2.4	51	50			
PORT MORESBY	<i>La Cour</i>	0.4	2.8	3.3				0.05	1.2	0.3
TOOLANGI	<i>La Cour</i>	1.2	4.5	4.4						

Scale values are in minutes of arc/mm (D) and gammas/mm (H,Z)

G N A N G A R A

MAGNETIC K-INDICES - APRIL 1967

Range for lower limit of K-9 is 350 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	1	0	3	4	4	2	4	4	22
2	1	1	2	4	3	3	3	2	19
3	2	1	1	1	0	0	0	2	07
4	1	4	3	2	4	4	2	1	21
5	2	2	3	2	2	3	1	1	16
6	3	3	2	3	4	3	1	1	20
7	1	1	1	1	0	0	4	0	08
8	2	2	2	1	0	1	2	1	11
9	2	1	1	1	1	0	0	3	09
10	2	2	1	1	2	1	4	1	14
11	1	1	1	1	2	1	1	1	09
12	2	2	1	0	1	0	0	0	06
13	1	1	1	0	0	0	0	1	04
14	2	1	2	0	1	1	1	0	08
15	2	1	1	1	0	1	2	1	09
16	2	3	2	1	3	2	4	1	18
17	2	1	1	1	2	1	1	1	10
18	1	1	1	1	2	1	2	3	12
19	3	3	4	3	4	3	4	2	26
20	2	3	2	2	3	1	4	2	19
21	2	1	1	1	2	3	1	1	12
22	3	2	4	4	3	3	3	2	24
23	2	1	2	1	2	5	5	2	20
24	3	4	3	5	5	5	3	3	31
25	2	2	1	1	0	0	1	1	08
26	1	1	1	1	1	1	0	0	06
27	1	1	1	1	0	0	0	1	05
28	1	1	1	0	0	0	0	0	03
29	1	1	1	0	0	2	1	0	06
30	2	1	2	0	0	0	0	0	05

M A C Q U A R I E I S L A N DMAGNETIC K-INDICES - APRIL 1967Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	0	1	2	7	6	3	4	3	26
2	1	2	2	6	5	3	3	1	23
3	2	1	1	0	0	0	0	1	05
4	0	4	2	3	6	5	1	1	22
5	2	3	4	4	2	4	1	0	20
6	2	3	2	5	5	4	1	0	22
7	2	2	3	0	1	0	1	0	09
8	1	1	1	1	1	0	1	0	06
9	1	0	0	3	3	0	0	1	08
10	2	2	1	0	1	1	1	1	09
11	0	0	0	0	2	0	1	0	03
12	0	2	0	1	2	0	0	0	05
13	0	0	0	0	0	0	0	0	00
14	1	0	1	0	0	0	0	0	02
15	1	0	0	0	0	0	0	0	01
16	0	3	3	2	4	2	3	2	19
17	3	4	1	3	3	3	0	0	17
18	1	1	1	4	5	2	0	2	16
19	4	4	4	6	6	4	2	2	32
20	2	1	3	3	5	2	3	1	20
21	2	3	3	4	4	4	1	1	22
22	3	3	6	6	6	4	2	1	31
23	1	1	1	1	1	6	6	3	20
24	3	4	3	6	6	5	4	3	34
25	3	3	2	2	1	0	0	1	12
26	1	1	0	1	0	1	0	0	04
27	1	0	0	0	0	0	0	0	01
28	1	1	0	0	0	0	0	0	02
29	0	1	0	1	0	0	0	1	03
30	1	0	1	0	0	0	0	0	03

M A W S O N

MAGNETIC K-INDICES - APRIL 1967

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	4	1	3	3	3	2	3	6	25
2	2	2	3	3	3	3	4	4	24
3	5	3	2	1	0	1	1	3	16
4	2	3	4	1	3	4	4	3	24
5	4	5	5	4	3	3	3	5	32
6	5	4	4	4	2	3	4	5	31
7	5	4	3	2	2	2	5	2	25
8	5	5	3	2	0	1	4	5	25
9	5	1	2	2	2	0	2	6	20
10	4	4	2	0	1	1	5	3	20
11	1	0	1	1	1	2	4	4	14
12	5	3	2	1	0	1	1	4	17
13	2	3	1	0	0	1	3	5	15
14	3	2	1	0	0	0	0	4	10
15	1	1	1	1	1	1	3	4	13
16	3	4	4	2	3	3	5	4	28
17	5	5	3	3	3	1	5	5	30
18	5	4	2	2	3	4	3	5	28
19	5	6	4	4	3	4	5	5	36
20	2	4	3	3	2	3	7	5	29
21	5	5	5+	4	3	3	3	5	33+
22	5	5	5	4	4	2	4	4	33
23	5	2	2	2	2	5	4	4	26
24	4	5	5	4	4	6	6	6	40
25	5	4	3	2	1	2	3	5	25
26	3	3	2	1	1	0	0	0	10
27	1	2	3	0	0	0	2	3	11
28	0	2	1	0	0	0	3	4	10
29	4	2	1	3	3	3	3	2	21
30	3	2	1	2	1	1	1	1	12

P O R T M O R E S B Y
MAGNETIC K-INDICES - APRIL 1967

Range for lower limit of K=9 is 300 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	0	1	4	5	4	3	3	2	22
2	2	2	2	3	4	3	3	2	21
3	3	0	0	0	0	1	0	2	06
4	1	5	2	2	5	3	3	2	23
5	2	2	3	3	2	3	1	1	17
6	2	2	3	3	3	3	1	1	18
7	2	2	2	2	1	1	2	1	13
8	2	2	1	1	1	2	2	1	12
9	2	0	2	2	3	1	0	1	11
10	2	2	2	2	2	1	2	1	14
11	1	1	1	1	3	1	2	2	12
12	1	1	1	1	0	0	0	0	04
13	1	1	0	0	0	0	0	1+	03+
14	1	1	3	2	1	1	1	1	11
15	2	2	0	1	1	2	2	1	11
16	2	2	3	1	3	2	3	2	18
17	2	2	2	3	3	0	1	2+	15+
18	0	0	1	2	2	3	2	3	13
19	3	3	4	5	3	2	2	3	25
20	2	2	2	2	3	0	2	1	14
21	2	2	2	2	2	3	1	1	15
22	3	2	3	3	3	4	2	2	22
23	3	3	2	2	3	4	4	2	23
24	4	4	3	4	4	2	2	2	25
25	3	3	1	1	0	1	0	1	10
26	0	0	0	1	1	1	0	0	03
27	1	1	0	0	1	1	0	1	05
28	1	1	1	0	1	1	0	1	06
29	1	1	2	2	2	2	2	3	15
30	1	1	1	2	2	1	1	0	09

T O O L A N G I

MAGNETIC K-INDICES - APRIL 1967

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	1	1	4	4	3	2	3	3	21
2	1	2	2	3	3	2	3	2	18
3	2	1	1	1	0	0	0	1	06
4	1	4	2	2	5	3	2	2	21
5	1	3	3	3	2	3	1	1	17
6	2	2	3	3	3	2	0	0	15
7	2	3	2	1	1	1	2	0	12
8	1	1	1	1	0	1	1	1	07
9	1	0	1	2	2	0	1	1	08
10	1	2	1	1	1	1	3	1	11
11	1	1	0	1	2	1	1	1	08
12	1	1	1	1	1	0	0	0	05
13	1	1	0	0	0	0	0	1	03
14	1	1	2	0	1	1	0	0	06
15	1	1	0	0	1	1	1	1	06
16	1	3	2	2	3	3	3	1	18
17	2	2	1	2	2	1	1	1	12
18	1	1	1	1	2	1	1	2	10
19	3	2	4	4	4	3	3	2	25
20	1	2	2	2	3	1	2	2	15
21	1	1	1	2	2	3	1	1	12
22	2	3	5	4	3	3	3	1	24
23	2	2	2	1	2	4	4	1	18
24	3	4	2	4	4	3	3	3	26
25	3	2	2	1	1	0	0	0	09
26	1	1	0	0	1	1	0	0	04
27	2	1	0	0	0	0	0	0	03
28	2	1	1	0	0	0	0	0	04
29	0	0	1	1	1	1	1	1	06
30	1	1	1	1	0	0	0	0	04

PRINCIPAL MAGNETIC STORMS

Observatory	Storm - time		Sudden commencement			Degree of activity	Maximal activity on K - scale 0 to 9			Ranges				
	Begin	End	Type	Amplitudes			Day	3 - hour period	K	D	H	Z		
				D	H								Z	
	d	h	m	d	h		/	γ	γ			/	γ	γ

Gnangara 23 14 .. 25 10

m 23 6, 7 5 13 33 78
 24 4, 5,
 6

Port Moresby N I L

Toolangi N I L

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PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H	D	Z
	γ	$^{\circ}$,	γ
GNANGARA	23874	2 53.6 W	-53499
MACQUARIE I.	13087	26 45.2 E	-64165
MAWSON	18380	61 32.6 W	-48195
PORT MORESBY	36292	6 10.7 E	-23052
TOOLANGI	22481	10 34.3 E	-56363

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z
Gnangara	1	0809	ssc* B	++	++	++
	4	0306	ssc B	+	-	+
	10	1920	bp B	+	+	+
	16	2005	bp B	+	+	+
	21	1601	bp B	+	+	+
Port Moresby	1	0807	ssc A	+	+	+
	2	1135	bps A	+		+
	4	0304	ssc* A	+	-	+
	14	0718	si B			
	16	2005	bp B	+	+	+
Toolangi	20	1312	bp B	+	-	+
	1	0807	ssc* A	++	+	+
	2	1133	bp B	+	-	+
	4	0304	ssc* A	++	+	+
		1342	bp B	+	-	+
	13	1225	p12 B			
	20	1315	bp B	+		+

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SOLAR FLARE EFFECTS

Observatory	Day	Time			Amp. (gammas)		
		Begin	Max	End	H	D	Z
Port Moresby	01	0347	0350	0400	+3	+3	+3