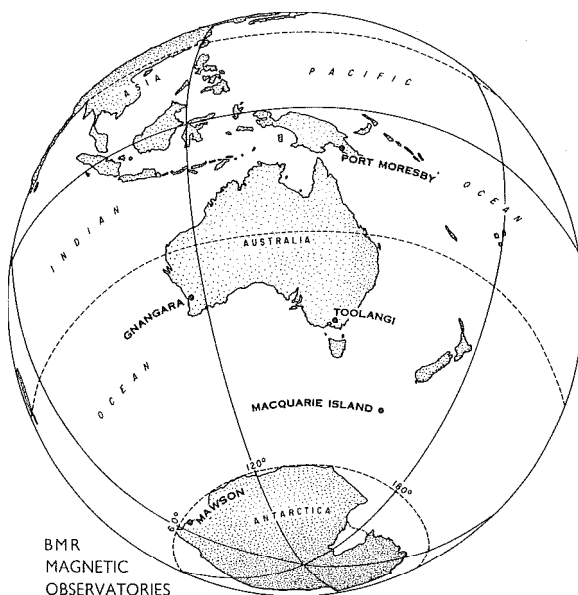




BUREAU OF MINERAL RESOURCES,
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



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

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

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C O N T E N T S

	<u>Page</u>
Contributing Observatories	2
K-indices	3
Principal Magnetic Storms	8
Monthly Mean Values, Sudden Commencement and Other Phenomena	9
Solar Flare Effects	10

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:-

Assistant Director (Geophysics),
Bureau of Mineral Resources,
P.O. Box 378,
CANBERRA CITY. A.C.T. 2601.

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.B. Connelly</i>	54°30'S	158°57'E	-60.7°	243.0°
MAWSON	<i>R.S. Smith</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 - JANUARY 1968

Range for lower limit of K=9 is 350 gammas

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

M A C Q U A R I E I S L A N D

MAGNETIC K-INDICES - JANUARY 1968

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>					<u>K-Sum</u>				<u>Char-</u>
1	6	6+	5+	6	5	6	3	2	39+	2
2	4	5	5	6	6	5	4	3	38	2
3	3	3	4	1	3	1	1	2	18	1
4	3	0	1	3	0	0	2	2	11	0
5	2	3	2	1	6	6	3	3	26	1
6	2	3	2	1	6	6	1	2	25	1
7	3	2	2	3	2	2	1	2	17	0
8	2	2	1	4	1	4	1	1	16	0
9	1	1	0	0	1	2	1	0	06	0
10	2	3	2	2	4	2	1	2	18	0
11	2	2	1	2	6	5	5	2	25	1
12	3	3	4	4	5	6	4	3	32	1
13	2	4	4	4	3	4	2	2	25	1
14	3	3	3	5	2	2	4	2	24	1
15	2	3	2	3	5	3	3	2	23	1
16	3	2	4	2	3	6	7	2	29	1
17	2	2	5	4	5	5	3	2	28	1
18	3	4	4	5	4	5	1	1	27	1
19	2	3	3	5	4	5	4	2	28	1
20	4	4	3	5	6	3	2	1	28	1
21	1	4	4	5	4	3	2	1	24	1
22	2	3	2	3	4	6	2	2	24	1
23	2	3	4	1	1	3	2	2	18	0
24	2	2	2	4	4	3	2	1	20	1
25	2	2	1	1	2	2	1	1	12	0
26	2	2	3	2	5	7	2	2	25	1
27	3	3	3	2	1	2	2	2	18	1
28	3	2	0	1	4	3	3	1	17	0
29	4	5	3	3	2	1	3	2	23	1
30	3	5	5	3	4	3	1	1	25	1
31	3	3	3	3	3	3	1	1	20	1

M A W S O N

MAGNETIC K-INDICES - JANUARY 1968

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>					<u>K-Indices</u>			<u>K-Sum</u>	<u>Char-</u>
1	4	5	5	5	5	5	3	36	2
2	4	6	6	7	6	7	5	46	2
3	4	4	4	3	3	4	2	28	1
4	3	3	3	3	4	3	5	29	1
5	4	4	4	3	5	5	3	33	1
6	6	5	4	5	4	5	6	39	2
7	5	5	4	3	2	4	3	30	1
8	5	5	4	4	3	3	4	32	1
9	3	1	2	1	3	3	3	19	1
10	4	4	3	3	3	3	3	26	1
11	4	3	3	1	5	6	4	31	1
12	5	6	5	4	4	5	5	40	2
13	4	6	5	4	3	4	4	35	2
14	5	7	6	4	4	4	5	40	2
15	4	5	5	4	4	4	5	34	2
16	4	5	4	2	4	5	5	34	2
17	4	4	5	4	5	3	5	34	2
18	6	4	6	5	4	3	2	33	1
19	3	5	5	4	4	5	4	36	2
20	5	5	3	5	4	4	3	32	1
21	3	5	6	4	3	3	2	29	1
22	4	3	3	3	4	4	5	30	1
23	4	4	4	2	3	4	5	32	1
24	5	3	3	3	3	3	6	30	1
25	4	3	2	2	3	4	4	26	1
26	4	5	3	3	4	5	2	29	1
27	4	4	4	2	3	3	4	28	1
28	6	5	2	3	4	4	6	35	2
29	5	6	5	3	3	2	4	32	1
30	5	6	5	3	2	3	3	31	1
31	4	5	3	3	3	4	2	28	1

P O R T M O R E S B Y

MAGNETIC K-INDICES - JANUARY 1968

Range for lower limit of K=9 is 300 gammas

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

T O O L A N G I

MAGNETIC K-INDICES - JANUARY 1968

Range for lower limit of K=9 is 500 gammas

Day	K-Indices								K-Sum	Char-
1	3	3	3	4	3	3	3	3	25	1
2	3	4	4	6	5	4	3	3	32	1
3	2	2	3	1	1	1	1	2	13	0
4	1	1	2	1	1	1	2	3	12	0
5	2	2	2	1	3	4	1	3	18	1
6	3	3	2	2	3	3	2	2	20	0
7	2	2	2	1	1	2	1	2	13	0
8	1	1	2	2	1	2	0	0	09	0
9	2	2	1	0	1	2	2	2	12	0
10	1	3	2	1	2	2	1	1	13	0
11	1	1	2	1	4	3	3	3	18	1
12	3	3	3	3	3	3	3	3	24	1
13	2	2	3	2	1	2	1	1	14	0
14	2	2	2	2	1	2	3	3	17	0
15	2	3	2	1	2	3	2	3	18	0
16	1	2	2	1	2	4	4	2	18	1
17	1	2	4	2	2	3	2	3	19	1
18	3	3	3	2	2	3	0	1	17	0
19	2	2	2	3	2	3	3	2	19	1
20	3	3	4	4	3	2	2	1	22	1
21	1	3	3	2	2	2	1	2	16	0
22	2	2	2	3	3	4	2	2	20	1
23	2	3	3	1	1	2	2	3	17	0
24	3	2	2	2	3	2	3	2	19	0
25	1	1	2	1	1	2	1	1	10	0
26	1	2	2	2	4	5	3	3	22	1
27	3	3	4	2	2	3	2	3	22	1
28	3	2	2	2	3	2	3	3	20	1
29	2	3	2	1	1	1	3	3	16	0
30	1	3	2	2	2	3	2	2	17	0
31	3	3	3	2	2	3	0	2	18	1

JANUARY 1968
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	02	02	..	03	06					ms	02	2	6	32	92	250
PORT MORESBY	29	22	25	03	15	ssc	0.2	13	3	ms	02	3	6	13	170	88
TOOLANGI	02	02	22	02	24	ssc	--	+11	--	ms	02	4	6	20	154	57

JANUARY 1968
PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H γ	D ° ,	Z γ
GNANGARA	23852	02 55.4 W	-53492
MACQUARIE I.	13075	26 49.7 E	-64145
MAWSON	18372	61 39.0 W	-48104
PORT MORESBY	36261	06 10.5 E	-23114
TOOLANGI	22445	10 36.0 E	-56371

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z
GNANGARA	9	1640	bp B	+	+	+
	11	1251	ssc* B	++	+	+
	14	1910	bp B	+	+	+
PORT MORESBY	11	1252	ssc A	+	0	+
	12	0845	si B			
	16	1950	si B			
	26	1442	ssc B	+	0	+
TOOLANGI	2	0222	ssc B	+		
		0522	si A			
	5	1421	bp B	+	-	+
	11	1251	ssc* A	+	-	+
	26	1441	ssc B	+	-	+
	30	0502	si B			

JANUARY 1968
SOLAR FLARE EFFECTS

Observatory	Day	Time			Amp.			(Gammas)
		Begin	Max.	End	H	D	Z	
Gnangara	2	0522	0527	0535	+11	+127	+83	
	9	0016	0020	0025	+2	-7	-5	
	9	0514	0515	0516		+2	+3	
Port Moresby	9	0014	0017	0022	+6	-5	+4	
	9	0510	0512	0517	+4	+6	+6	