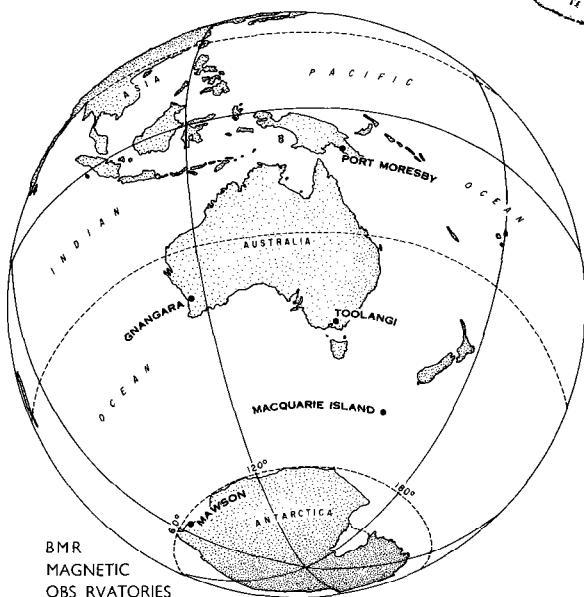


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BUREAU OF MINERAL RESOURCES,
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



Volume 19, No. 3
March 1971

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*Issued under the authority of
The Hon. Reginald W. Swartz, Minister for National Development*

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

MINISTER: Hon. Reginald W. Swartz

SECRETARY: L.F. Bott

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ERRATA

GECOPHYSICAL OBSERVATORY REPORT

VOLUME 19, No. 3

PAGE 2

OBSERVER IN CHARGE should be

MACQUARIE I. M.I. McDOWELL

MAWSON J.J. PETKOVIC

C O N T E N T S

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The terminology used in this report is that accepted by international convention. All times are in Universal 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>P. J. Gregson</i>	31°47'S	115°57'E	-43.2°	185.6°
MACQUARIE I.	<i>J.R. Meath</i>	54°30'S	158°57'E	-60.7°	243.0°
MAWSON	<i>M. J. Robertson</i>	67°36'S	62°53'E	-73.2°	103.1°
PORT MORESBY	<i>I.B. Everingham</i>	9°25'S	147°09'E	-18.7°	218.0°
TOOLANGI	<i>C.A. van der Waal</i>	37°32'S	145°28'E	-46.7°	220.6°

MAGNETOGRAPHS

OBSERVATORY	TYPE	NOMINAL SCALE VALUES					
		NORMAL			SENSITIVE		RAPID RUN
		D	H	Z	D	H	Z
GNANGARA	<i>Eschenhagen</i>	1	2½	5½			
MACQUARIE I.	<i>La Cour</i>	2½	24	21			1 5½ 6
MAWSON	<i>La Cour</i>	2½	21	22	1	10	10
PORT MORESBY	<i>La Cour</i>	½	2½	3½			0.05 1½ ½
TOOLANGI	<i>La Cour</i>	1	4½	5			

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

MAGNETOMETERS

*Absolute data are based on control observations made with QHM's, BMZ's, Askania Declinometers and Proton Precession Magnetometers.
Errors in preliminary values are not likely to exceed ±5 γ or 0.5 minutes.*

G N A N G A R A

MAGNETIC K-INDICES - MARCH 1971

Range for lower limit of K=9 is 350 gammas

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

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

MAGNETIC K-INDICES - MARCH 1971

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>					<u>K-Indices</u>				<u>K-Sum</u>	<u>C</u>
1	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	3	3	0	1	-	-
12	1	2	1	5	7	5	5	5	31	1
13	3	4	6	6	7	6	7	4	43	2
14	3	4	7	7	7	5	4	3	40	2
15	4	4	6	4	-	-	3	2	-	-
16	3	3	2	6	6	6	5	1	32	1
17	2	2	3	2	5	2	4	1	21	1
18	3	3	1	3	0	2	1	1	14	0
19	2	2	1	2	-	-	2	3	-	-
20	3	4	5	4	0	0	1	1	18	1
21	1	2	2	3	0	0	1	1	10	0
22	1	1	1	0	0	1	0	1	5	0
23	1	2	1	0	0	1	2	1	8	0
24	2	2	4	4	2	3	2	2	21	1
25	2	3	6	6	3	1	1	1	23	1
26	2	2	6	4	6	3	3	2	28	1
27	2	2	3	3	5	2	1	2	20	1
28	2	1	0	0	0	0	1	1	5	0
29	1	1	1	1	1	0	2	1	8	0
30	2	1	1	3	3	3	2	1	16	0
31	4	4	5	5	6	6	5	3	38	2

M A W S O N

MAGNETIC K-INDICES - MARCH 1971

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>					<u>K-Indices</u>				<u>K-Sum</u>	<u>C</u>
1	4	4	2	2	3	2	1	2	20	1
2	2	4	3	1	1	2	5	4	22	1
3	3	4	4	2	3	3	6	5	30	1
4	6	5	4	3	3	4	4	4	33	1
5	5	4	2	2	3	4	1	1	22	1
6	2	4	2	2	2	2	6	5	25	1
7	5	3	2	2	2	3	4	4	25	1
8	6	5	3	2	3	3	4	4	30	1
9	3	4	3	3	2	2	2	2	21	1
10	4	4	4	4	3	4	3	4	30	1
11	4	4	3	3	3	2	1	2	22	1
12	2	3	3	3	3	5	4	7	30	1
13	4	6	5	5	4	7	7	6	44	2
14	5	5	5	5	4	5	7	8	44	2
15	7	6	6	4	3	6	5	5	42	2
16	6	4	4	3	3	3	6	6	35	2
17	5	5	4	3	2	4	5	5	33	1
18	6	4	2	2	1	3	6	6	30	1
19	5	5	3	4	3	5	6	7	38	2
20	6	5	5	3	2	3	1	5	30	1
21	3	2	2	2	2	1	1	4	17	0
22	3	4	2	0	1	1	4	3	18	0
23	2	2	2	2	1	3	2	2	16	0
24	3	4	4	3	2	2	6	7	31	1
25	5	3	5	3	2	3	2	5	28	1
26	4	4	5	5	3	5	4	5	35	2
27	4	4	4	3	3	2	4	5	29	1
28	4	2	1	0	1	1	2	2	13	0
29	3	1	2	1	1	0	0	4	12	0
30	4	3	2	2	3	4	6	4	28	1
31	6	5	5	3	4	7	7	3	40	2

P O R T M O R E S B Y

MAGNETIC K-INDICES - MARCH 1971

Range for lower limit of K=9 is 300 gammas

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

T O O L A N G I

MAGNETIC K-INDICES - MARCH 1971

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>	<u>C</u>
1	1	1	2	1	1	1	0	1	08	0
2	1	3	1	0	1	1	0	1	08	0
3	1	2	1	1	1	1	3	3	13	0
4	3	3	2	4	3	2	2	1	20	1
5	1	1	1	1	3	2	0	0	09	0
6	0	0	0	1	1	0	1	1	04	0
7	1	1	1	0	1	1	0	0	05	0
8	2	2	2	3	4	2	2	2	19	1
9	1	1	3	3	1	0	1	1	11	0
10	2	2	3	3	3	3	1	1	18	0
11	1	3	1	3	3	2	0	0	13	0
12	1	2	1	3	4	3	3	3	20	1
13	3	3	5	5	4	5	4	2	31	1
14	2	3	4	5	4	3	3	3	27	1
15	3	4	4	2	3	3	2	1	22	1
16	2	2	2	4	3	3	1	2	19	1
17	1	1	2	3	3	3	2	1	16	0
18	2	2	1	2	1	1	1	1	11	0
19	1	1	1	3	4	4	3	3	20	1
20	1	3	3	2	0	0	0	1	10	0
21	0	1	1	2	0	0	0	1	05	0
22	0	1	1	0	1	1	1	0	05	0
23	0	1	1	1	1	1	1	1	07	0
24	2	3	4	3	1	2	3	3	21	1
25	1	2	4	3	2	2	2	1	17	0
26	2	2	3	4	3	2	3	1	20	1
27	1	1	2	3	3	2	2	1	15	0
28	0	1	0	0	0	0	1	0	02	0
29	0	0	1	0	1	0	0	0	02	0
30	0	0	0	1	2	1	3	2	09	0
31	2	4	4	3	4	4	4	2	27	1

MARCH 1971
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	12		1216	1508		ssc	-1	+2	-3	ms	13	6	6	16	110	110
PORT MORESBY	13		06..	1511		..				m	13 14	3,4 4	5 5	7	110	60
∞ TOOLANGI	12		09..	1521		..	--	--	--	m	13 14	3,4,6 4	5 5	20	130	60

MARCH 1971

PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H	D	Z
	γ	$^{\circ}$,	γ
GNANGARA	23764	03 01.5W	-53464
MACQUARIE I.	12974	27 08.5E	
MAWSON	18377	62 03.9W	-47764
PORT MORESBY	36187	06 13.7E	-23175
TOOLANGI	22353	10 40.9E	-56331

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	
GNANGARA	12	1216	ssc	B	+	-
	17	1656	bps	B	+	+
PORT MORESBY	19	1150	si	B	+	0
TOOLANGI	08	1345	bp	B	+	
	12	1215	bp	A	+	-
	16	0918	bp	A	+	-
	17	1656	bp	A	+	-
	19	1150	si	B	+	-