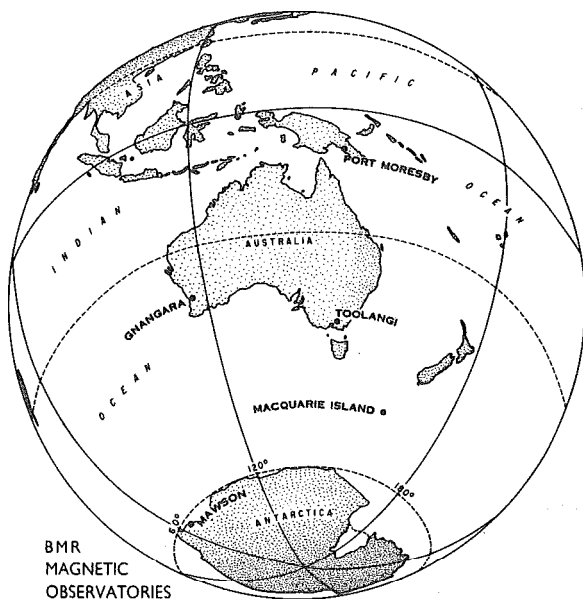




BUREAU OF MINERAL RESOURCES,
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



Volume 18, No. 9
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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

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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°	185.8°
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°	220.8°

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 ±5γ or 0.5 minutes.*

G N A N G A R A

MAGNETIC K-INDICES - SEPTEMBER 1970

Range for lower limit of K=9 is 350 gammas

Day					K-Indices				K-Sum	C
1	1	1	2	4	3	5	5	3	24	1
2	2	0	0	4	3	3	3	2	17	0
3	0	2	1	3	4	2	1	3	16	0
4	1	1	2	1	2	3	1	1	12	0
5	1	0	1	0	1	0	1	2	06	0
6	1	1	1	0	1	3	2	3	12	0
7	0	0	1	0	1	2	3	1	08	0
8	0	1	3	1	4	3	3	1	16	0
9	0	1	1	1	1	2	2	2	10	0
10	3	2	1	0	0	1	0	0	07	0
11	0	1	0	0	0	0	1	1	03	0
12	2	2	2	1	0	1	1	1	10	0
13	2	3	2	3	4	3	4	4	25	1
14	3	2	2	4	5	3	3	3	25	1
15	2	2	2	3	2	1	1	3	16	0
16	1	1+	2	2	2	0	2	1	11+	0
17	1	1	2	2	2	2	1	2	13	0
18	2	2	2	1	2	3	2	2	16	0
19	2	2	2	3	3	3	4	3	22	1
20	2	3	2	3	3	2	2	3	20	1
21	2	2	2	2	4	2	2	2	18	1
22	2	2	1	2	2	3	1	(2)	(15)	0
23	2	0	1	3	1	2	1	2	12	0
24	1	1	1	1	1	1	3	2	11	0
25	1	1	2	2	0	2	2	2	12	0
26	1	1	1	1	2	2	2	2	12	0
27	2	2	3	2	2	4	2	3	20	1
28	4	1	0	2	2	1	1	2	13	0
29	2	2	2	2	0	0	0	2	10	0
30	1	3	3	1	1	1	2	(2)	(14)	0

MACQUARIE ISLAND

MAGNETIC K-INDICES - SEPTEMBER 1970

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	0	2	5	7	5	6	4	3	32	1
2	2	2	2	6	5	4	4	3	28	1
3	2	2	3	6	6	5	1	2	27	1
4	2	2	2	4	4	4	2	2	22	1
5	2	2	1	2	2	4	2	2	17	0
6	1	1	1	0	2	3	2	1	11	0
7	1	1	0	1	2	0	1	1	7	0
8	0	2	2	2	5	5	3	2	21	1
9	0	1	1	0	0	1	2	2	7	0
10	3	3	1	0	0	0	0	0	7	0
11	0	1	0	0	0	0	0	1	2	0
12	1	2	4	0	0	0	0	0	7	0
13	1	4	6	6	5	5	4	4	35	2
14	4	3	3	6	6	7	3	2	34	2
15	4	3	3	5	3	1	2	1	22	1
16	1	3	3	3	4	0	1	1	16	0
17	1	4	4	3	1	2	1	0	16	0
18	1	4	3	5	5	4	2	2	26	1
19	2	5	4	5	4	4	3	3	30	1
20	1	4	3	5	5	4	2	2	26	1
21	4	4	6	4	6	5	4	2	35	2
22	3	4	2	2	2	3	3	1	20	1
23	1	1	3	5	2	1	1	1	15	0
24	1	1	2	2	0	0	1	1	8	0
25	1	3	3	3	0	1	1	1	13	0
26	0	2	2	2	2	1	0	0	9	0
27	3	4	6	4	6	6	3	3	35	2
28	3	2	1	1	2	1	1	1	12	0
29	1	2	2	1	0	0	0	3	9	0
30	1	3	3	2	0	0	1	2	12	0

M A W S O N

MAGNETIC K-INDICES - SEPTEMBER 1970

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	1	2	5	5	4	3	4	5	29	1
2	4	4	3	4	3	4	4	6	32	1
3	2	6	3	4	2	3	4	6	30	1
4	4	4	3	2	2	3	4	4	26	1
5	5	4	2	1	2	4	5	6	29	1
6	2	2	2	1	1	2	4	6	20	1
7	3	2	2	1	2	1	3	6	20	1
8	2	3	3	2	3	3	6	2	24	1
9	2	3	3	2	2	2	6	5	25	1
10	5	6	4	2	1	1	0	0	19	1
11	1	1	1	1	0	1	1	1	7	0
12	2	3	3	2	1	2	1	1	15	0
13	2	5	6	4	3	4	7	6	37	2
14	5	5	4	4	5	3	6	5	37	2
15	6	6	4	2	3	3	4	5	33	1
16	4	4	4	3	2	2	3	3	25	1
17	4	5	4	2	1	3	4	5	28	1
18	4	5	3	3	3	3	5	5	31	1
19	2	6	4	4	3	4	6	6	35	2
20	3	5	5	4	3	5	6	6	37	2
21	6	5	5	4	3	5	7	4	39	2
22	4	4	3	4	2	4	4	5	30	1
23	4	3	3	4	3	3	3	4	27	1
24	5	4	3	2	2	2	5	5	28	1
25	2	5	4	2	3	2	4	3	25	1
26	2	5	3	2	2	2	4	7	27	1
27	6	6	6	2	4	6	3	6	39	2
28	4	3	2	2	2	2	1	1	17	0
29	2	2	2	1	0	0	0	4	11	0
30	2	5	4	2	2	1	2	5	23	1

P O R T M O R E S B Y

MAGNETIC K-INDICES - SEPTEMBER 1970

Range for lower limit of K=9 is 300 gammas

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

T O O L A N G I

MAGNETIC K-INDICES - SEPTEMBER 1970

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	0	2	4	5	4	4	4	3	26	1
2	3	2	1	5	3	4	3	2	23	1
3	0	1	3	3	4	3	2	3	19	1
4	2	2	2	2	3	3	1	2	17	0
5	2	2	1	1	2	3	2	3	16	0
6	0	1	1	0	2	2	2	2	10	0
7	1	0	1	1	1	1	1	2	8	0
8	0	2	3	2	3	4	3	2	19	1
9	1	2	1	1	1	2	1	2	11	0
10	3	2	1	0	1	1	0	0	8	0
11	0	1	0	0	0	0	0	1	2	0
12	1	1	3	2	0	1	0	0	8	0
13	1	3	4	3	3	3	4	3	24	1
14	2	2	3	4	4	5	3	2	25	1
15	3	2	2	3	2	1	2	2	17	0
16	1	2	3	2	3	0	2	1	14	0
17	1	2	3	2	2	2	1	1	14	0
18	1	2	2	2	1	3	3	2	16	0
19	1	4	3	4	3	4	3	2	24	1
20	1	3	3	3	3	3	2	2	20	1
21	2	2	3	3	4	3	3	2	22	1
22	2	3	0	2	2	3	2	2	16	0
23	0	0	1	3	2	2	1	1	10	0
24	1	1	2	3	1	1	2	1	12	0
25	1	2	3	3	1	1	2	0	13	0
26	1	2	2	2	1	2	1	1	12	0
27	2	2	4	3	3	4	3	2	23	1
28	3	2	1	1	2	1	1	1	12	0
29	1	2	3	2	0	1	0	3	12	0
30	1	4	4	1	1	1	1	2	15	0

SEPTEMBER 1970
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	01	0440		0123		..	-	-	-	m	01	6,7	5	14	80	80
PORT MORESBY							N		I							
TOOLANGI							N		I							

SEPTEMBER 1970

PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H γ	D o i	Z γ
GNANGARA	23779	02 59.9W	-53470
MACQUARIE I.	12990	27 11.3E	-64069
MAWSON	18358	62 03.3W	-47809
PORT MORESBY	36191	06 13.4E	-23163
TOOLANGI	22365	10 40.8E	-56339

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	
GNANGARA	01	1251	si	B	+	+
	03	1053	bps	B	+	-
	18	1456	bp	B	+	-
	30	0447	si*	B	-*	-
PORT MORESBY	14	1120	bp	B	+	-
	14	1350	bp	B	+	0
	18	1455	bp	B	+	-
	30	0447	si	B	-	-
	30	0600	si	B	+	+
	30	0629	si	B	-	-
TOOLANGI	2	1004	bp	A	-	-
	4	1150	bp	B	+	-
	8	1401	bps	A	+	-
	15	1121	bps	B	+	-
	17	0841	bp	B	+	-
	18	1455	bps	B	+	+
	20	0900	bp	B	+	-
	21	1155	bps	A	+	-
	23	0930	bp	B	+	-
	30	0447	si	A	-	-