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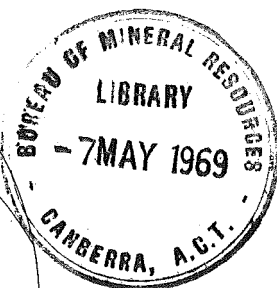
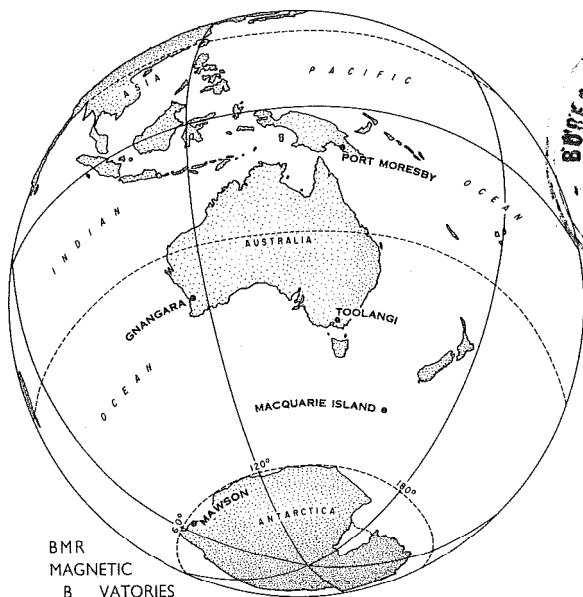
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BUREAU OF MINERAL RESOURCES,
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



Volume 16, No. 10
October 1968

*Issued under the authority of
The Hon. David Fairbairn, 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 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 - OCTOBER 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	4	1	3	3	2	2	3	22	1
2	5	5	5	5	5	4	2	3	34	2
3	5	4	4	5	1	0	0	0	19	1
4	1	0	1	0	0	3	0	0	05	0
5	0	0	1	2	2	0	0	1	06	0
6	1	0	4	1	1	1	2	1	11	0
7	3	3	3	0	1	3	4	3	20	1
8	2	0	1	0	1	2	2	2	10	0
9	2	1	1	1	2	3	2	2	14	0
10	1	0	1	1	1	0	0	1	05	0
11	1	0	2	0	0	0	1	2	06	0
12	4	4	4	5	4	5	6	4	36	2
13	4	3	3	4	4	4	2	2	26	1
14	3	2+	1+	2+	2+	3+	2+	2+	17+	-
15	2+	1+	0+	2+	1+	2+	1+	1+	10+	0
16	0+	1	2	0	2	2	2	1	10+	0
17	3	2	2	1	2	2	3	2	17	0
18	3	3	3	1	0	2	1	1	14	0
19	1	0	1	2	2	1	4	4	15	1
20	1	1	3	1	3	2	0	1	12	0
21	0	1	1	1	0	0	0	1	04	0
22	1	0	0	0	0	0	0	1	02	0
23	0	1	0	0	0	2	1	1	05	0
24	1	1	0	1	1	3	3	2	12	0
25	1	1	2	3	4	0	1	2	14	0
26	1	1	0	1	0	1	2	3	09	0
27	2	2	2	1	2	1	1	1	12	0
28	1	1	1	1	1	1	0	5	11	1
29	4	3	2	5	4	6	6	4	34	2
30	2	1	2	2	4	3	2	4	20	1
31	4	2	3	8	8	7	7	5	44	2

MACQUARIE ISLAND

MAGNETIC K-INDICES - OCTOBER 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	5	5	3	4	4	3	3	1	28	1
2	5	6	6	7	7	5	3	3	42	2
3	4	6	7	6	3	0	0	0	26	1
4	0	0	0	0	0	2	1	0	03	0
5	0	0	1	4	1	0	0	0	06	0
6	0	0	3	4	3	1	1	1	13	0
7	3	2	2	0	0	1	3	2	13	0
8	2	2	0	3	1	3	0	1	12	0
9	3	2	0	0	4	3	1	1	14	0
10	2	1	0	3	0	0	0	0	06	0
11	0	0	1	0	1	0	1	1	04	0
12	3	6	6	7	6	7	7	3	45	2
13	4	4	6	7	6	5	3	2	37	2
14	3	3	4	4	5	4	1	1	25	1
15	0	2	1	5	1	1	1	0	11	0
16	0	1	3	1	5	4	1	1	16	0
17	3	2	1	1	3	3	1	1	15	0
18	2	3	2	3	1	0	2	1	14	0
19	1	0	0	2	4	0	3	3	13	0
20	1	2	3	4	3	2	1	0	16	0
21	0	0	0	1	0	0	0	0	01	0
22	0	1	0	0	0	0	1	1	03	0
23	0	0	0	0	0	0	2	1	03	0
24	0	1	0	1	0	3	3	1	09	0
25	0	2	3	5	5	1	1	0	17	0
26	0	0	2	3	0	0	2	2	09	0
27	2	2	3	1	3	3	1	1	16	0
28	0	1	1	0	1	2	1	3	09	0
29	3	3	2	2	5	8	7	4	34	2
30	2	2	2	5	6	4	1	3	25	1
31	5	4	7	8	7	7	8	6	52	2

M A W S O N

MAGNETIC K-INDICES - OCTOBER 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	5	4	3	2	3	4	5	6	32	1
2	5	7	6	5	6	4	5	6	44	2
3	8	6	6	6	3	2	1	2	34	2
4	2	2	3	1	1	3	3	1	16	0
5	2	2	2	3	2	1	0	3	15	0
6	3	3	3	3	2	2	5	4	25	1
7	4	4	3	0	1	2	7	6	27	1
8	5	4	2	1	2	3	5	5	27	1
9	5	5	1	1	2	5	3	5	27	1
10	4	2	2	1	1	1	0	1	12	0
11	1	1	2	0	0	1	1	1	07	0
12	6	6	5	5	5	7	7	6	47	2
13	7	6	5	5	4	5	6	7	45	2
14	5	5	4	3	3	4	6	7	37	2
15	3	2	2	3	4	2	4	4	24	1
16	1	3	3	1	3	3	2	2	18	0
17	5	5	3	2	2	3	5	5	30	1
18	5	5	3	3	1	2	2	5	26	1
19	3	4	2	2	2	1	6	5	25	1
20	4	3	3	3	3	3	2	1	22	1
21	1	1	2	2	1	0	1	2	10	0
22	0	2	0	1	1	0	2	3	09	0
23	1	2	1	0	1	1	2	1	09	0
24	2	2	1	1	2	4	6	2	20	1
25	2	3	3	4	3	2	2	6	25	1
26	2	1	1	2	2	1	3	4	16	0
27	4	3	4	2	3	2	3	3	24	1
28	3	2	2	1	3	2	1	4	18	0
29	4	4	3	3	5	7	6	4+	36+	2
30	4	3	3	4	5	4	5	6	34	2
31	6	6	6	7	7	7	4	5	48	2

P O R T M O R E S B Y

MAGNETIC K-INDICES - OCTOBER 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	4	4	2	3	2	2	1	2	20	1
2	4	5	5	5	5	2	2	3	31	2
3	5	3	4	5	1	1	1	0	20	1
4	1	1	1	0	1	2	1	1	08	0
5	1	1	2	2	2	1	1	1	11	0
6	0	0	4	3	2	2	2	2	15	1
7	3	2	3	0	2	4	3	2	19	1
8	2	1	1	1	2	3	1	1	12	0
9	2	2	1	1	2	3	1	2	14	0
10	1	0	1	2	1	0	0	2	07	0
11	1	1	1	1	0	0	1	2	07	0
12	2	4	4	5	4	5	5	4	33	2
13	3	3	4	3	4	3	2	3	25	1
14	2	1	2	3	3	2	2	3	18	0
15	1	1	1	2	1	2	0	0	08	0
16	1	2	2	1	3	2	3	2	16	0
17	2	2	2	2	3	2	1	2	16	0
18	3	3	2	2	1	2	1	2	16	0
19	2	1	1	3	3	2	4	3	19	1
20	1	1	2	2	2	1	0	0	09	0
21	0	0	0	0	0	0	0	1	01	0
22	0	0	0	0	1	0	0	0	01	0
23	0	0	1	1	1	1	2	1+	07+	0
24	2	1	1	1	2	3	3	2	15	0
25	2	2	3	2	4	1	1	1	16	0
26	1	0	0	2	2	1	3	2	11	0
27	1	1	2	2	2	1	1	2	12	0
28	1	1	2	1	2	2	1	3	13	0
29	4	3	3	5	4	5	5	5	34	2
30	3	3	2	3	4	3	2	3	23	1
31	3	5	6	6	8	6	5	4	43	2

T O O L A N G I

MAGNETIC K-INDICES - OCTOBER 1968

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>	<u>Char-</u>
1	4	4	1	3	3	3	2	2	22	1
2	4	4	4	5	5	3	3	3	31	1
3	5	4	5	5	1	1	0	0	21	1
4	1	1	1	0	1	2	1	1	08	0
5	0	1	2	2	2	1	0	0	08	0
6	0	0	4	3	2	1	1	1	12	0
7	2	2	3	0	1	3	3	2	16	0
8	2	2	1	2	1	2	1	1	12	0
9	1	1	1	0	2	3	2	1	11	0
10	1	0	1	1	1	0	0	1	05	0
11	0	1	3	0	1	1	1	2	09	0
12	3	4	5	5	4	5	5	4	35	2
13	3	3	4	4	3	3	2	2	24	1
14	2	3	3	3	3	2	2	2	20	1
15	1	2	1	2	1	2	1	0	10	0
16	0	1	2	1	3	2	2	1	12	0
17	2	3	2	2	2	2	2	3	18	0
18	2	3	3	2	1	1	1	1	14	0
19	1	1	2	2	3	2	3	3	16	0
20	1	1	3	1	2	2	0	0	10	0
21	1	1	2	1	1	0	1	0	07	0
22	0	1	1	0	0	0	0	0	02	0
23	0	1	1	1	0	1	2	1	07	0
24	2	1	1	2	1	3	3	1	14	0
25	1	1	2	3	4	2	1	1	15	0
26	1	1	2	1	0	1	2	2	10	0
27	1	2	3	1	2	1	1	1	12	0
28	1	1	2	1	1	1	2	4	13	0
29	2	3	3	5	4	5	3	4	29	1
30	2	2	2	3	4	3	1	3	20	1
31	4	2	4	7	7	6	6	4	40	2

OCTOBER 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	m	d	h		D	H	Z							
GNANGARA	02	00	16	03	11	ssc*	-6*	-5*	-20*	m	02	1 - 5	5	19	80	107
	12	01	..	13	18					ms	03	1, 4				
	29	09	09	29	23	ssc	+4	+42	+17	ms	12	7	6	19	104	124
	31	08	59	01	02	ssc	+5	+72	+32	s	29	6, 7	6	22	98	104
											31	4, 5	8	38	300	225
PORT MORESBY	02	00	17	03	12	ssc	-0.5	+21	+18	m	02	2,3,4,5	5	8	140	90
	12	03	..	14	00	...				m	03	1,4	5			
	29	06	46	30	00	ssc	+4	+14	+14	m	12	4,6,7	5	7	150	60
	31	08	58	01	06	ssc	+0.9	+60	+50	s	29	4,6,7,8	5	7	110	80
											31	5	8	8	300	150
TOOLANGI	01	23	--	03	12	...	--	--	--	m	02	4,5	5	25	177	55
	11	17	--	14	18	...	--	--	--	m	03	1,3,4	5			
	28	21	--	29	23	...	--	--	--	m	12	3,4,6,7	5	28	144	71
	31	08	59	03	18	ssc	-4	+103	+19	s	29	4,6	5	19	150	40
											01	6	8	74	476	252

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PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H	D	Z
	γ	$^{\circ}$,	γ
GNANGARA	23841	2 56.1W	-53488
MACQUARIE I.	13037	26 56.5E	-64118
MAWSON	18366	61 46.5W	-48026
PORT MORESBY	36245	06 11.2E	-23142
TOOLANGI	22425	10 39.0E	-56356

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z
GNANGARA	2	0016	ssc*	B	-	-
	4	1645	bp	B	+	+
	6	0628	ssc	B	+	+
	7	1831	bp	B	+	+
	20	1308	bps	B	+	-
	26	1833	ssc	B	+	+
	29	0645	ssc	B	+	+
	29	0909	ssc	A	+	+
	31	0859	ssc	A	+	+
PORT MORESBY	2	0017	ssc	B	+	-
	2	0346	si	B		
	2	1035	si	B		
	4	1513	bp	B	+	+
	5	1234	bp	B	+	0
	5	1310	bp	B	+	0
	6	0627	ssc	A	+	+
	15	1532	bp	B	+	+
	20	1314	bp	B	+	+
	26	1832	ssc	B	+	+
	29	0646	ssc	B	+	+
	29	0908	ssc	B	+	+
	31	0858	ssc	A	+	+

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z

(Continued from Page 9)

TOOLANGI	1	1408	bp	B	+	-	+
	6	0627	ssc	A	+	+	+
	19	1200	bp	B	+	-	+
	21	0605	si	B			
	25	1257	bp	B	+	-	+
	26	1832	ssc	A	+	+	+
	29	0908	si	A			
	31	0859	ssc	A	+	-	+

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SOLAR FLARE EFFECTS

Observatory	Day	Time		Amp.	(Gammas)		
		Begin	Max. End		H	D	Z
Gnangara	23	0358	0359	0402	+1	+5	+2
Port Moresby	15	0315	0320	0340	+5	0	+4
	21	0255	0300	0310	+2	-	+2
	21	0427	0432	-	+2	+.3	+4
	21	0503	0507	0520	+3	+.4	+7
	21	0604	0610	0620	+4	+1.0	+7
	23	0356	0402	0420	+8	+.5	+7