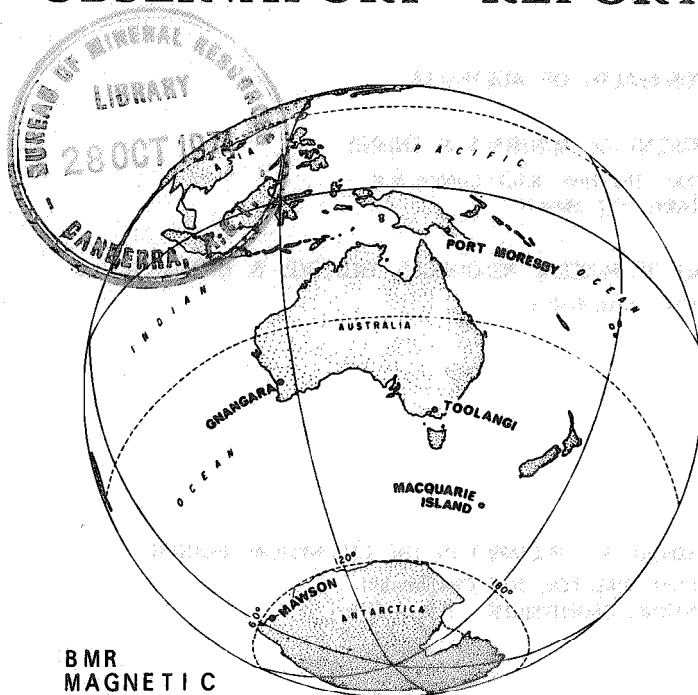


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BUREAU OF MINERAL RESOURCES.
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



BMR
MAGNETIC
OBSERV T RI

Volume 22, No. 5

May 1974

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Issued under the authority of
The Hon. R.F.X. Connor, M.P., Minister for Minerals & Energy

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The terminology used in this report is that accepted by international convention. The units of field intensity, nanotesla (nT), are those of the SI system. All times are in Universal Time. Should further information be required, apply to:

**GEOPHYSICAL OBSERVATORY GROUP
BUREAU OF MINERAL RESOURCES
P.O. BOX 378
CANBERRA CITY, A.C.T. 2601**

Note: $1\text{nT} \approx 1$ gamma in the C.G.S. system

CONTRIBUTING OBSERVATORIES

OBSERVATORY	OBSERVER IN CHARGE	GEOGRAPHIC		GEOMAGNETIC	
		LAT	LONG	LAT	LONG
GNANGARA	P.J. Gregson	31°47'S	115°57'E	— 43.3°	185.8°
MACQUARIE I	J.J. Walsh	54°30'S	158°57'E	— 61.1°	243.1°
MAWSON	P.J. Cameron	67°36'S	62°53'E	— 73.1°	102.9°
PORT MORESBY	I.B. Everingham	9°25'S	147°09'E	— 18.6°	217.9°
TOOLANGI	R.L. Paine	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	D H Z

GNANGARA	Eschenhagen	1	2½	5½		
MACQUARIE I	La Cour	2½	24	21		1 5½ 6
MAWSON	La Cour	2½	21	22	1	10 10
PORT MORESBY	La Cour	½	2½	3½		
TOOLANGI	La Cour	1	4½	5		

Scale values are in minutes of arc/mm (D) and nT/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 nT or 0.5 minutes

G N A N G A R A

MAGNETIC K-INDICES - MAY 1974

Range for lower limit of K=9 is 350 nT

Day	K-Indices								K-Sum	C
01	2	0	0	0	0	2	4	2	10	0
02	2	2	3	3	3	3	3	3	22	1
03	4	3	4	2	2	2	2	2	21	1
04	3	3	3	4	4	3	5	5	30	2
05	3	3	4	5	3	4	5	3	30	2
06	2	3	2	1	2	1	0	0	11	0
07	1	1	3	3	5	4	1	2	20	1
08	2	1	3	4	1	1	3	3	18	1
09	3	2	4	3	3	2	0	1	18	1
10	1	2	2	1	0	1	0	0	07	0
11	0	0	1	2	1	1	1	2	08	0
12	1	1	1	1	0	0	1	1	06	0
13	0	1	2	1	1	0	2	2	09	0
14	2	1	0	0	1	1	3	3	11	0
15	2	1	3	4	6	4	4	5	29	2
16	3	3	4	3	5	3	4	3	28	1
17	4	5	2	5	6	5	4	4	35	2
18	3	4	4	3	4	3	3	3	27	1
19	2	3	3	3	5	4	4	3	26	1
20	3	2	2	2	5	2	5	3	24	1
21	2	2	3	5	4	4	3	2	25	1
22	2	3	3	2	3	4	5	4	26	1
23	2	5	3	3	3	4	6	3+	29+	1
24	2+	2+	5	5	3	5	5	4	31+	2
25	3	1	2	5	3	2	2	2	20	1
26	0+	0+	2	2	3	1	4	1	13+	1
27	4	2	1	2	2	1	2	2	16	0
28	1	1	2	4	3	1	0	1	13	0
29	1	1	1	2	2	2	3	2	14	0
30	1	2	3	3	2	4	3	2	20	1
31	2	4	3	3	4	3	4	6	29	1

MACQUARIE ISLAND

MAGNETIC K-INDICES - MAY 1974

Range for lower limit of K=9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>	<u>G</u>
01	2	2	0	0	0	1	3	1	09	0
02	-	-	-	-	-	-	-	-	-	-
03	4	5	5	5	4	2	2	2	29	1
04	2	3	4	6	6	5	4	3	33	2
05	3	4	6	6	5	5	4	2	35	2
06	2	2	1	1	0	0	0	0	06	0
07	0	0	1	2	7	6	0	1	17	1
08	0	0	0	5	0	0	1	2	08	0
09	2	4	4	4	4	3	0	0	21	1
10	0	1	0	0	0	0	0	0	01	0
11	0	0	0	1	0	0	0	0	01	0
12	1	0	0	0	0	0	0	0	01	0
13	0	0	0	1	0	0	0	0	01	0
14	0	0	0	0	2	0	2	2	06	0
15	4	1	4	6	8	7	3	3	36	2
16	2	2	6	7	6	5	3	2	33	2
17	4	4	6	6	5	6	3	3	37	2
18	3	5	4	4	6	5	2	3	32	2
19	3	3	5	4	5	6	3	1	30	2
20	3	3	3	6	6	5	4	2	32	2
21	3	3	4	6	6	4	2	1	29	1
22	3	3	4	3	4	4	3	4	28	1
23	3	4	4	4	5	5	5	2	32	2
24	3	4	7	7	5	6	4	4	40	2
25	3	2	1	7	4	1	1	1	20	1
26	1	1	3	3	4	3	2	1	18	1
27	3	2	1	0	4	0	1	0	11	0
28	1	0	4	5	4	0	0	0	14	1
29	0	0	3	3	1	2	0	0	09	0
30	0	0	0	3	4	6	2	1	16	1
31	1	2	3	6	5	4	3	5	29	1

M A W S O N

MAGNETIC K-INDICES - MAY 1974

Range for lower limit of K=9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>	<u>C</u>
01	4	4	2	1	1	1	5	4	22	1
02	5	5	4	4	3	5	3	3	32	2
03	6	5	5	3	3	3	3	2	30	2
04	4	5	5	5	5	4	7	6	41	2
05	6	6	6	5	5	5	6	5	44	2
06	5	5	4	2	2	1	1	2	22	1
07	2	1	3	3	5	4	2	1	21	1
08	2	2	3	3	3	3	6	6	28	1
09	6	5	5	5	3	2	1	2	29	1
10	2	3	2	1	0	2	2	1	13	0
11	1	1	1	2	2	2	1	2	12	0
12	6	2	1	1	1	1	3	3	18	1
13	1	1	2	1	1	1	3	6	16	1
14	4	3	1	1	1	1	7	5	23	1
15	5	4	4	4	5	4	2	7	35	2
16	5	4	6	4	4	3	6	7	39	2
17	7	6	6	5	6	5	6	6	45	2
18	5	6	4	4	3	3	7	6	40	2
19	4	5	6	4	3	4	6	4	36	2
20	6	6	5	5	4	4	5	5	40	2
21	7	5	5	5	3	5	6	6	42	2
22	4	7	6	4	3	3	8	6	41	2
23	3	5	6	3	3	6	7	6	39	2
24	5	6	5	6	4	5	7	7	45	2
25	5	4	4	4	4	3	2	5	31	2
26	6	4	4	4	3	3	3	4	31	2
27	7	6	4	4	2	2	3	6	34	2
28	4	4	4	4	2	1	1	5	25	1
29	3	4	3	3	3	2	5	3	26	1
30	2	4	4	4	4	6	4	8	36	2
31	4	6	4	4	4	4	7	7	37	2

P O R T M O R E S B Y

MAGNETIC K-INDICES - MAY 1974

Range for lower limit of K=9 is 300 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>	<u>C</u>
01	1	1	1	1	1	2	2	3	12	0
02	2	3	3	3	3	4	2	3	23	1
03	3	3	3	2	2	1	1	2	17	0
04	3	3	2	4	3	3	3	3	24	1
05	3	3	4	4	3	3	3	3	26	1
06	2	3	1	1	2	1	1	1	12	0
07	1	1	2	2	3	3	3	2	17	0
08	2	1	1	3	1	1	2	3	14	0
09	3	3	3	3	3	2	1	1	19	1
10	1	1	1	0	1	0	0	0	04	0
11	1	0	0	2	1	1	2	2	09	0
12	1	2	1	0	0	0	1	2	07	0
13	1	2	1	1	2	1	1	1	10	0
14	2	1	2	1	1	1	3	2	13	0
15	3	2	4	4	5	3	2	2+	25+	1
16	3	4	5	4	4	3	3	4	30	1
17	5	5	3	4	4	2	2	3	28	1
18	3	5	4	3	4	3	2	2	26	1
19	2	3	4	2	3	3	2	2	21	1
20	3	3	3	3	4	2	3	2	23	1
21	3	2	3	5	2	2	2	3	22	1
22	3	4	4	2	2	3	3	3	24	1
23	2	5	4	2	3	3	4	1	24	1
24	3	4	5	5	3	3	3	3	29	1
25	2	2	2	3	2	1	1	2	15	0
26	2	2	3	3	2	1	3	2	18	0
27	3	2	1	1	1	1	2	2	13	0
28	2	2	4	4	1	0	0	1	14	1
29	1	1	2	2	1	2	2	2	13	0
30	2	2	2	3	2	3	3	2	19	1
31	2	3	3	3	4	3	3	3	24	1

T O O L A N G I

MAGNETIC K-INDICES - MAY 1974

Range for lower limit of K=9 is 500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>	<u>C</u>
01	2	1	0	0	0	1	3	2	09	0
02	2	3	3	3	3	4	3	3	24	1
03	4	3	4	3	2	2	2	2	22	1
04	3	2	3	4	4	3	4	3	26	1
05	3	3	4	5	3	4	4	3	29	1
06	2	2	2	1	1	1	0	0	09	0
07	1	1	2	3	4	3	1	1	16	1
08	1	1	2	3	1	2	2	3	15	0
09	2	3	3	3	3	2	1	1	18	0
10	0	1	0	0	0	1	0	0	02	0
11	0	0	0	2	2	1	1	1	07	0
12	1	1	0	0	0	0	0	1	03	0
13	1	2	1	0	1	0	1	2	08	0
14	2	1	0	1	2	1	3	3	13	0
15	3	2	4	4	5	4	3	4	29	1
16	2	3	5	5	5	3	3	4	30	2
17	4	4	3	5	5	4	3	3	31	2
18	4	4	4	4	4	3	2	3	28	1
19	2	3	4	4	5	4	3	3	28	1
20	4	2	3	3	4	3	4	3	26	1
21	3	2	4	5	3	3	3	3	26	1
22	3	3	3	3	3	3	5	3	26	1
23	3	5	4	3	3	3	5	2	28	1
24	3	4	5	5	3	3	5	4	32	2
25	3	2	3	5	3	2	2	2	22	1
26	2	3	3	3	3	2	3	2	21	1
27	4	3	2	1	2	1	2	2	17	1
28	2	2	4	4	3	0	0	1	16	1
29	2	2	3	3	2	2	2	1	17	0
30	2	2	2	3	3	4	2	2	20	1
31	2	3	3	4	4	3	3	4	26	1

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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
	d	h	m	d	h		/	nT	nT				/	nT	nT	
GNANGARA	01	17	..	0	08	..				04	(7,8)	5	15	80	90	
	14	19	..	25	04	..				05	(4,7)	6	26	120	150	
										15	(5)					
										17	(5)					
										23	(7)					
	29	14	..	03	12	..				31	(8)	6	20	90	100	
PORT MORESBY	15	00	..	25	15	..				15	(5)	5	5	130	50	
										16	(3)	5				
										17	(1,2)	5				
										18	(2)	5				
										21	(4)	5				
										23	(2)	5				
										24	(3,4)	5				
TOOLANGI	02	00	..	06	09	..				05	(4)	5	17	50	40	
	-4	-9	..	18	18	..				15	(5)	5	27	15	60	
										16	(3,4,5)	5				
										17	(4,5)	5				
										23	(2,7)	5	26	110	50	
	23	03	..	25	15	..				24	(3,4,7)					
										25	(4)	5				

MAY 1974

PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H nT	D ° ,	Z nT
GNANGARA	23642	03 09.4W	-53480
MACQUARIE I.	12869	27 33.6E	-63982
MAWSON	18392	62 25.6W	-47387
PORT MORESBY	36096	06 17.1E	-23309
TOOLANGI	22247	10 46.4E	-56320

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z

PORT MORESBY nil

TOOLANGI nil

GNANGARA	15	1318	bp	B	+	-
	26	1817	bp	B	+	+