

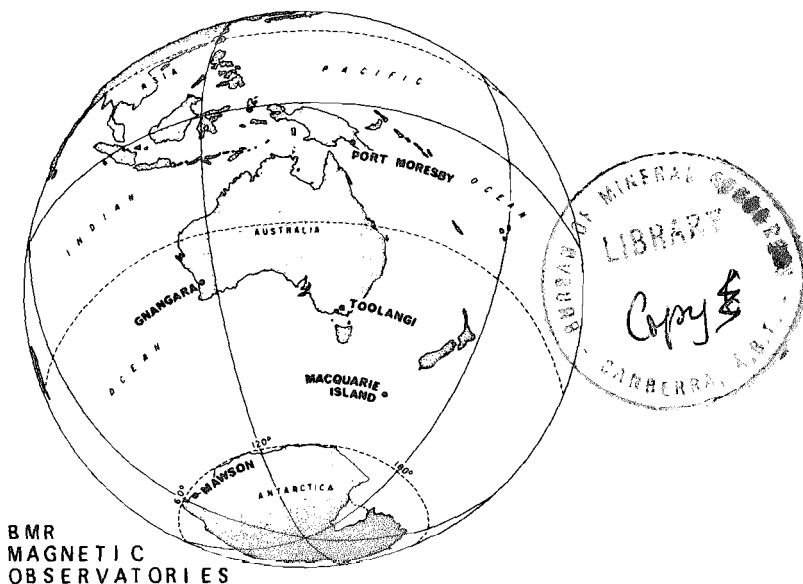
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BUREAU OF MINERAL RESOURCES.
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



BMR
MAGNETIC
OBSERVATORIES

Volume 21, No. 10

October 1973

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

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COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF 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: $1\text{nT} \equiv 1$ 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	P.J. Hill	54°30'S	158°57'E	— 61.1°	243.1°
MAWSON	R.A. Almond	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 - OCTOBER 1973

Range for lower limit of K=9 is 350 nT

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

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

MAGNETIC K-INDICES - OCTOBER 1973

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	1	1	1	0	0	0	1	1	05	0
02	2	5	6	7	7	5	4	3	39	2
03	5	7	7	7	6	5	2	1	40	2
04	2	3	3	1	2	4	5	0	20	1
05	1	1	1	3	1	2	3	3	15	0
06	2	2	4	4	0	3	2	1	18	1
07	2	1	1	2	1	1	0	0	08	0
08	1	1	2	5	1	0	1	1	12	0
09	1	1	0	2	3	1	3	3	14	0
10	2	3	4	3	5	6	3	2	28	1
11	2	2	3	3	3	2	1	1	17	0
12	2	3	4	4	4	5	2	2	26	1
13	3	2	2	5	4	2	2	1	21	1
14	1	1	1	3	2	2	2	1	13	0
15	2	2	2	3	2	0	1	0	12	0
16	1	2	5	6	7	5	5	3	34	2
17	4	3	4	7	5	5	4	2	34	2
18	2	4	4	7	7	7	3	2	36	2
19	3	5	6	7	5	4	1	2	33	2
20	3	4	5	5	6	5	3	2	33	2
21	4	3	2	7	7	7	5	3	38	2
22	4	4	5	6	6	5	2	0	31	2
23	2	2	4	2	1	0	0	0	11	0
24	2	2	1	4	4	0	1	1	15	1
25	1	1	1	1	1	0	1	2	08	0
26	2	1	0	0	0	0	0	0	03	0
27	0	1	1	0	0	1	1	1	05	0
28	2	2	4	4	5	7	4	3	31	2
29	5	4	5	7	7	7	7	4	46	2
30	5	4	4	5	4	5	4	3	34	2
31	5	5	6	5	3	3	2	0	29	1

M A W S O N

MAGNETIC K-INDICES - OCTOBER 1973

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	2	0	4	4	21	1
02	4	6	6	4	4	4	6	4	38	2
03	6	7	7	4	4	4	4	5	41	2
04	5	3	5	2	2	4	5	4	30	2
05	3	2	2	3	2	3	7	6	28	1
06	6	3	3	2	1	3	6	4	28	1
07	6	3	2	1	2	2	1	3	20	1
08	5	3	2	2	2	2	4	3	23	1
09	3	2	2	2	1	1	6	6	23	1
10	3	6	5	3	3	5	6	6	37	2
11	5	4	3	3	3	2	6	4	30	2
12	3	5	3	3	3	3	4	7	33	2
13	6	4	5	4	2	3	7	5	36	2
14	4	3	4	3	3	4	6	4	31	2
15	4	3	2	2	2	1	-	-	--	-
16	2	3	6	6	4	4	6	7	38	2
17	6	5	5	5	4	7	5	5	42	2
18	6	5	5	4	6	5	3	6	40	2
19	5	5	5	5	3	3	4	5	35	2
20	3	6	5	3	4	6	4	5	36	2
21	5	4	4	5	6	5	8	6	43	2
22	6	6	4	4	3	6	5	4	38	2
23	3	4	3	2	2	3	3	5	25	1
24	3	5	4	2	3	2	4	6	29	1
25	3	4	2	2	2	1	2	2	18	1
26	4	3	2	1	1	1	3	2	17	1
27	2	3	3	1	1	3	4	2	19	1
28	3	3	4	4	4	4	6	6	34	2
29	7	7	6	7	6	7	8	7	55	2
30	8	6	4	3	4	4	7	6	42	2
31	6	5	5	4	3	2	3	3	31	2

P O R T M O R E S B Y

MAGNETIC K-INDICES - OCTOBER 1973

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

T O O L A N G I

MAGNETIC K-INDICES - OCTOBER 1973

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	1	0	0	1	1	1	07	0
02	0	4	4	4	4	3	3	3	25	1
03	3	5	5	5	5	4	2	2	31	2
04	2	2	3	1	1	4	4	1	18	1
05	1	1	1	2	1	2	3	3	14	0
06	2	1	3	3	0	3	3	3	18	0
07	1	1	1	1	1	1	0	1	07	0
08	2	1	1	3	1	1	3	1	13	0
09	1	1	0	1	2	2	3	3	13	0
10	2	4	3	2	4	4	2	2	23	1
11	2	2	2	2	2	2	2	2	16	0
12	2	3	3	3	2	3	2	4	22	1
13	4	3	3	4	2	2	3	2	23	1
14	1	2	2	2	3	2	3	0	15	0
15	2	2	2	2	1	0	1	0	10	0
16	1	2	5	5	4	3	4	4	28	1
17	3	4	3	4	5	3	2	2	26	1
18	1	2	2	4	6	3	3	2	23	1
19	2	3	3	5	4	2	2	3	24	1
20	3	4	3	4	4	4	2	2	26	1
21	2	3	3	5	5	4	4	3	29	1
22	3	3	3	4	3	3	2	1	22	1
23	1	1	2	2	1	1	0	1	09	0
24	2	2	2	3	3	1	1	2	16	0
25	1	1	2	2	1	1	1	2	11	0
26	1	1	1	0	1	0	0	1	05	0
27	0	1	2	0	1	1	1	1	07	0
28	1	2	4	4	2	4	3	3	23	1
29	4	5	4	6	6	5	5	4	39	2
30	5	4	3	3	3	3	3	3	27	1
31	3	3	4	3	2	2	2	0	19	1

OCTOBER 1973

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		/	nT	nT					/	nT	nT
GNANGARA	02	04	..	03	18	..				m	02	4	5	16	120	110
											03	4,5	5			
	09	19	..	11	10	..				m	10	6	5	10	70	70
	16	05	20	22	18	ssc*	-0	+2*	+0	ms	18	5	6	25	80	160
											21	5	6			
	28	05	..	30	09	..				ms	29	4,5,7	6	21	130	150
PORT MORESBY	02	04	..	03	18	..				m	02	3	5	7	140	70
											03	4	5			
	09	12	..	11	03	..				m	10	6	5	5	70	40
	16	05	20	22	12	ssc	+0.1	+7	+7	ms	16	3	6	8	110	80
	28	03	..	31	18	..				ms	29	5	6	7	140	60
TOOLANGI	02	40	..	05	01	..				m	03	2,3,4,5	5	22	110	50
	16	05	20	22	03	ssc*	0	+16	0	ms	18	5	6	18	150	40
	28	04	..	31	21	..				ms	29	4,5	6	24	190	70

OCTOBER 1973

PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H nT	D ° ,	Z nT
GNANGARA	23675	03 08.4W	-53458
MACQUARIE I.	12897	27 29.7E	-63978
MAWSON	18384	62 19.6W	-47466
PORT MORESBY	36118	06 16.7E	-23283
TOOLANGI	22272	10 45.1E	-56316

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z
PORT MORESBY	16	0520	ssc B	+	+	
	16	0645	s1 B	+	+	
	16	0733	s1 A	-	-	
TOOLANGI	16	0520	ssc* B	+	0	
	18	1325	bp A	+	-	
GNANGARA	04	1741	bps B	+	+	
	10	1518	bp B			
	16	0520	ssc* B	++	-	