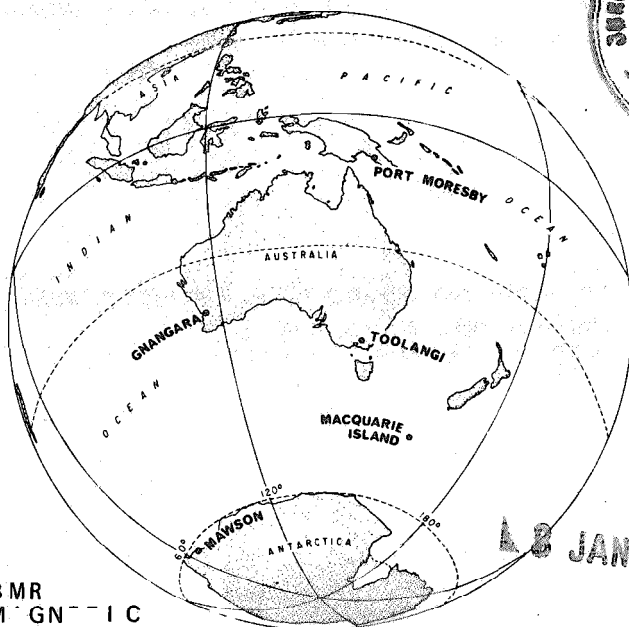
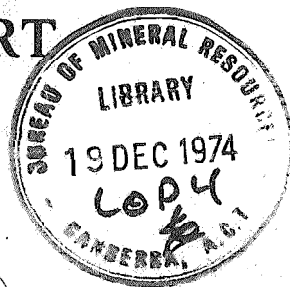


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BUREAU OF MINERAL RESOURCES.
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



BMR
MAGNETIC
OBSERVATORIES

18 JAN 1975

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

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF MINERALS & ENERGY

MINISTER: The Hon. R.F.X. Connor, M.P.

SECRETARY: C.L. Hewitt

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OBSERVATORY		OBSERVATORY		OBSERVATORY		OBSERVATORY	
NAME	LOC.	NAME	LOC.	NAME	LOC.	NAME	LOC.

1960	1961	1962	1963	1964	1965
1966	1967	1968	1969	1970	1971
1972	1973	1974	1975	1976	1977
1978	1979	1980	1981	1982	1983
1984	1985	1986	1987	1988	1989
1990	1991	1992	1993	1994	1995

CONTENTS

Page

Contributing Observatories	2
K-Indices	3
Principal Magnetic Storms	8
Monthly Mean Values, Sudden Commencements and Other Phenomena	9
Solar Flare Effects	9

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: 1nT $\equiv$ 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	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 - OCTOBER 1974

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	3	3	1	4	5	5	4	3	28	1
02	2	1	3	2	5	4	6	5	28	1
03	2	2	3+	1+	2	3	2	1	16+	1
04	2	1	2	1	2	3	3	2	16	1
05	2	0	0	1	2	2	3	3	13	0
06	3	3	2	2	3	1	1	1	16	1
07	0	1	0	1	1	0	2	2	07	0
08	1	2	1	2	3	2	5	3	19	1
09	2	3	4	4	5	4	6	3	31	1
10	3	2	3	1	2	1	2	3	17	1
11	3	3	1	1	0	1	2	1	12	0
12	1	2	2	1	3	2	4	3	18	1
13	5	4	6	6	6	6	4	3	40	2
14	2	2	2	2	2	5	5	5	25	1
15	4	4	5	4	4	4	3	4	32	1
16	4	3	4	6	6	5	5	5	38	2
17	4	3	4	6	5	5	4	2	33	1
18	4	4	3	4	4	4	4	3	30	1
19	4	3	2	5	5	4	3	3	29	1
20	3	4	5	5	5	6	2	3	33	2
21	2	2	3	2	1	2	2	2	16	0
22	2	1	2	3	4	3	3	2	20	1
23	1	2	1	1	1	0	1	2	09	0
24	5	5	5	4	3	4	3	3	32	1
25	3	2	3	4	4	4	2	3	25	1
26	3	3	3	4	5	5	4	4	31	1
27	4	3	2	4	4	5	5	3	30	1
28	4	3	1	4	4	5	3	4	28	1
29	4	2	2	3	4	2	2	2	21	1
30	2	1	2	2	3	3	1	2	16	0
31	2	1	1	1	0	2	3	2	12	0

MACQUARIE ISLAND

MAGNETIC K-INDICES - OCTOBER 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	3	4	1	6	7	4	3	2	30	2
02	1	2	2	6	8	4	4	5	32	2
03	2	3	2	3	3	2	1	0	16	0
04	1	1	2	1	3	3	1	2	14	0
05	1	1	1	3	3	2	1	2	14	0
06	3	2	1	4	3	0	0	0	13	0
07	0	1	0	3	0	0	1	1	06	0
08	0	1	1	3	5	1	3	1	15	1
09	2	6	5	4	7	7	4	2	37	2
10	2	3	3	1	3	0	0	2	14	0
11	2	1	1	0	0	0	0	0	04	0
12	0	2	2	0	1	1	3	3	12	0
13	6	6	8	7	6	7	6	3	49	2
14	2	2	1	4	3	7	7	4	30	2
15	5	5	7	7	4	2	3	2	35	2
16	4	4	4	8	6	6	5	5	42	2
17	4	5	6	7	6	7	4	2	41	2
18	5	4	5	6	6	5	4	3	38	2
19	3	4	3	7	6	4	4	1	32	2
20	2	5	7	8	7	7	4	2	42	2
21	2	2	2	1	1	1	1	1	11	0
22	2	1	4	5	6	4	3	1	26	1
23	2	2	0	0	0	0	0	2	06	0
24	4	5	7	5	4	5	3	2	35	2
25	3	3	4	6	7	6	2	3	34	2
26	3	3	5	6	6	5	3	3	34	2
27	2	4	2	5	6	7	4	2	32	2
28	5	4	1	5	6	6	2	4	33	2
29	3	3	6	6	6	4	2	2	32	2
30	2	2	1	4	5	4	1	1	20	1
31	2	1	1	0	0	0	1	1	06	0

M A W S O N

MAGNETIC K-INDICES - OCTOBER 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	6	5	6	4	5	5	7	6	44	2
02	3	4	4	4	5	3	7	7	37	2
03	6	4	3	5	2	3	6	4	33	2
04	3	3	3	2	2	2	5	6	26	1
05	3	3	2	3	2	2	2	5	22	1
06	6	5	3	2	2	1	6	5	30	2
07	2	3	2	2	2	2	5	4	22	1
08	5	2	2	2	3	3	7	6	30	2
09	4	6	7	4	5	5	7	5	43	2
10	4	5	4	2	2	2	5	6	30	2
11	4	3	2	2	2	1	5	5	24	1
12	3	4	4	3	4	2	3	6	29	1
13	7	8	5	5	3	3	7	5	43	2
14	4	4	3	-	2	5	7	7	32+	2
15	6	6	-	5	4	4	3	6	34+	2
16	6	5	5	6	6	5	3	6	42	2
17	5	5	6	5	6	7	6	6	46	2
18	7	6	5	4	5	5	8	5	45	2
19	4	5	4	4	4	6	6	5	38	2
20	5	6	5	5	4	7	7	6	45	2
21	4	4	5	3	2	3	3	5	29	1
22	4	4	4	4	4	3	6	2	31	1
23	3	4	4	2	2	0	1	3	17	1
24	4	7	7	3	4	5	3	5	38	2
25	5	5	6	4	3	5	3	6	37	2
26	5	5	5	5	4	5	7	5	41	2
27	6	5	4	3	4	6	6	6	40	2
28	5	6	3	4	3	6	6	8	41	2
29	4	5	4	3	4	3	6	6	35	2
30	5	3	3	3	3	3	5	5	27	1
31	4	3	2	1	1	1	6	6	24	1

P O R T M O R E S B Y

MAGNETIC K-INDICES - OCTOBER 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	3	4	2	3	4	3	2	2	23	1
02	1	2	3	2	5	3	3	3	22	1
03	3	2	3	1	1	2	1	2	15	0
04	2	1	1	1	2	2	2	2	13	0
05	1	0	1	1	2	2	2	3	12	0
06	3	2	3	2	2	1	1	1	15	0
07	1	1	1	1	1	2	2	3	12	0
08	1	1	1	3	3	2	3	2	16	0
09	2	5	4	5	4	4	4	3	31	2
10	2	3	3	1	1	1	1	2	14	0
11	3	2	1	1	1	1	1	1	11	0
12	1	3	2	1	4	3	4	4	22	1
13	3	4	5	5	4	5	4	2	32	2
14	3	2	2	2	2	4	4	3	22	1
15	3	5	4	3	4	3	3	4	29	1
16	3	3	3	6	5	4	3	4	31	2
17	3	3	4	5	5	5	3	3	31	2
18	3	3	3	3	3	3	3	3	24	1
19	2	3	2	5	3	3	2	2	22	1
20	3	4	3	5	4	4	2	2	27	1
21	1	2	3	2	1	2	1	2	14	0
22	1	2	2	3	4	3	2	1	18	1
23	1	2	1	1	1	1	1	3	11	0
24	4	5	5	3	3	4	3	3	30	1
25	2	3	4	3	3	4	2	2	23	1
26	3	2	2	4	4	3	1	2	21	1
27	3	2	2	3	4	4	3	2	23	1
28	3	2	1	3	3	3	2	3	20	1
29	2	3	2	3	3	2	1	2	18	0
30	1	2	2	3	3	2	1	1	15	0
31	1	1	2	1	0	1	1	3	10	0

T O O L A N G I

MAGNETIC K-INDICES - OCTOBER 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	3	4	1	5	5	3	3	2	26	1
02	2	3	3	3	5	3	4	5	28	1
03	3	3	2	2	2	3	2	1	18	0
04	3	2	2	1	2	3	1	2	15	0
05	1	1	1	2	2	2	2	3	14	0
06	3	3	2	3	3	1	1	2	18	0
07	2	2	1	2	1	1	1	2	12	0
08	2	2	2	3	3	2	4	2	20	1
09	2	3	4	4	5	5	5	3	31	2
10	3	3	3	1	2	1	1	2	16	0
11	3	3	1	0	0	1	1	1	10	0
12	1	2	3	1	4	2	4	4	21	1
13	4	4	7	5	5	5	3	3	36	2
14	2	3	2	2	2	4	4	4	23	1
15	4	4	5	4	3	2	3	4	29	1
16	3	3+	4	6	6	5	4	4	35+	2
17	3	5	5	5	5	5	4	4	36	2
18	3	4	4	4	4	3	4	4	30	1
19	3	3	3	5	4	3	3	3	27	1
20	2	4	5	5	4	4	2	2	28	1
21	2	3	3	2	1	2	2	2	17	0
22	2	2	3	3	4	3	2	2	21	1
23	2	2	1	1	0	0	1	2	09	0
24	4	6	6	4	3	4	3	3	33	2
25	2	3	4	4	4	3	2	3	25	1
26	3	4	4	4	4	3	4	3	29	1
27	3	3	2	4	3	5	3	2	25	1
28	4	3	3	3	4	4	3	4	26	1
29	3	3	4	3	3	2	2	3	23	1
30	2	2	2	2	3	2	1	2	16	0
31	2	1	1	2	0	2	2	2	12	0

OCTOBER 1974

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	09	03	..	09	22	..				09	(7)	6	26	90	130	
	12	12	44	14	04	ssc*	+2	+27*	+12	13	(3,4,5,6)	6	21	178	124	
	14	15	..	20	20	..				16	(4,5)	6	18	100	110	
										17	(4)					
										20	(6)					
	23	19	..	24	21	..				21	(1,2,3)	5	6	130	90	
PORT MORESBY	01	13	..	03	09	..				02	(5)	5	4	60	40	
	09	03	..	10	09	..				09	(2,4)	5	6	130	50	
	12	12	44	21	08	ssc	+0.5	+26	+22	16	(4)	6	6	200	20	
	20	03	44	20	18	ssc	+0.7	+21	+20	20	(4)	5	5	100	50	
	23	18	50	29	18	ssc	+0.1	+3	+2	24	(2,3)	5	7	200	70	
TOOLANGI	09	03	..	10	09	..				09	(5,6,7)	5	29	130	80	
	12	12	45	13	22	ssc*	-0.9*	36	6	13	(3)	7	30	190	120	
	16	04	..	20	00	..				16	(4,5)	6	28	190	70	
	23	19	..	25	00	..				24	(2,3)	6	24	160	60	

OCTOBER 1974

PRELIMINARY MONTHLY MEAN VALUES

Based on selected quiet days

OBSERVATORY	H nT	D °	Z nT
GNANGARA	23630	03 10.0W	-53484
MACQUARIE I.	12861	27 35.4E	-63986
MAWSON	18387	62 26.3W	-47363
PORT MORESBY	36080	06 18.0E	-23333
TOOLANGI	22232	10 47.1E	-56315

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA

OBSERVATORY	DAY	TIME	TYPE	SENSE OF MOVEMENT		
				H	D	Z
PORT MORESBY	12	1244	ssc B	+	+	
	20	0344	ssc B	+	+	
	23	1850	ssc B	+	+	
TOOLANGI	12	1245	ssc* B	+	-*	
	13	1002	si B	+	-	
	20	0345	ssc B	+	-	
GNANGARA	08	1827	bps A	+	+	
	12	1244	ssc* B	++	+	

SOLAR FLARE EFFECTS

Observatory	Day	Time			H(nT)	Amp D(°)	Z(nT)
		Begin	Max	End			
PORT MORESBY	11	0327	0337	0350	+11	+0.5	+10