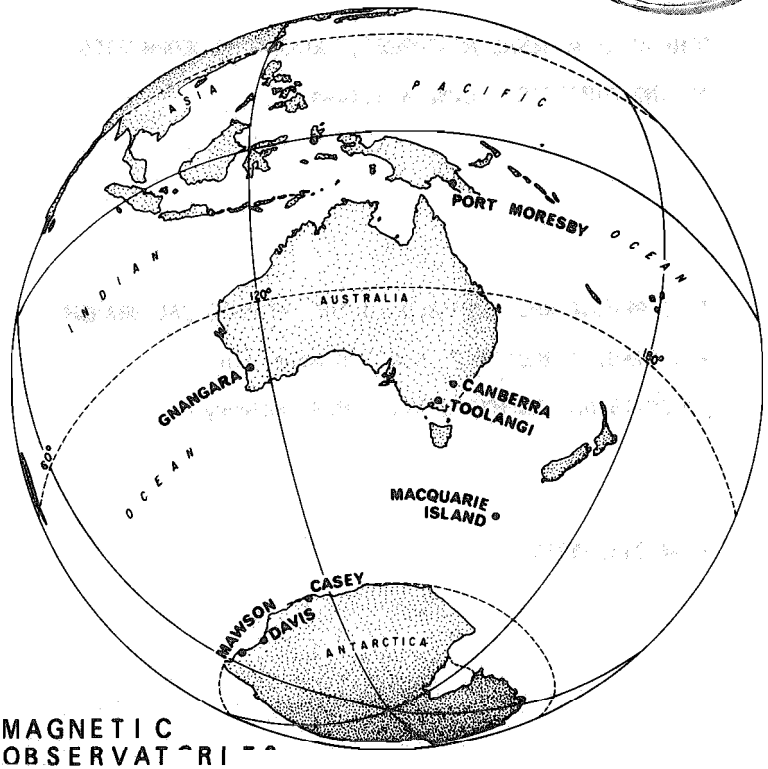
BUREAU OF MINERAL RESOURCES,
GEOLOGY & GEOPHYSICS

GEOPHYSICAL OBSERVATORY REPORT



MAGNETIC OBSERVATORIES

Volume 27, No. 10
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DEPARTMENT OF NATIONAL DEVELOPMENT

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The data from the Port Moresby geophysical observatory are contributed by the Geological Survey of Papua New Guinea.

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 SUBSECTION
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
PORT MORESBY	I.D. Ripper	9°25'S	147°09'E	-18.6°	217.9°
GNANGARA	P.J. Gregson	31°47'S	115°57'E	-43.3°	185.8°
CANBERRA	R.S. Smith	35°19'S	149°22'E	-44.0°	224.7°
TOOLANGI	R.S. Smith	37°32'S	145°28'E	-46.7°	220.8°
MACQUARIE I	K.D. Wake-Dyster	54°30'S	158°57'E	-61.1°	243.1°
MAWSON	M.J. Sexton	67°36'S	62°53'E	-73.1°	102.9°
DAVIS	J. Morrisey	68°35'S	77°58'E	-76.7°	119.9°
CASEY	J. Hudsworth	66°17'S	110°32'E	-77.8°	179.1°

MAGNETOGRAPHS

OBSERVATORY	TYPE	NOMINAL SCALE VALUES					
		NORMAL			SENSITIVE		
		D	H	Z	D	H	Z
PORT MORESBY	La Cour	0.5	3	4			
GNANGARA	Eschenhagen	1	3	6			
TOOLANGI	La Cour	1	5	5			
MACQUARIE I	La Cour	2.5	20	21			
MAWSON	La Cour	2.5	21	22	1	10	10
CANBERRA	Elsec digital	D	F	I			
			0.1nT				

Scale values are in minutes of arc/mm (D) and nT/mm (H,Z)

MAGNETOMETERS

Absolute data are based on observations made with QHM'S BMZ's declinometers and proton precession magnetometers.
Errors in preliminary values are not likely to exceed 5 nT or 0.5 minutes.

PORT MORESBY

MAGNETIC K-INDICES - OCTOBER 1979

Range for lower limit of K = 9 is 300 nT

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

GNANGARA

MAGNETIC K-INDICES - OCTOBER 1979

Range for lower limit of K = 9 is 450 nT

Day	K-Indices								K-Sum
01	2	1	1	4	3	3	1	3	18
02	1	1	1	1	2	3	3	3	15
03	3	2	3	1	2	3	3	2	19
04	3	2	3	3	1	1	0	0	13
05	1	1	1	1	1	3	1	2	11
06	3	2	3	4	6	5	2	2	27
07	4	4	4	3	6	4	4	5	34
08	4	3	3	5	4	4	3	5	31
09	3	3	3	3	3	3	3	3	24
10	3	2	3	2	3	2	3	2	20
11	1	2	3	3	3	3	2	2	19
12	2	1	2	3	3	2	2	4	19
13	3	2	3	2	1	3	3	4	21
14	3	1	3	2	1	2	1	1	14
15	1	1	2	2	3	2	3	2	16
16	2	1	1	1	3	0	2	2	12
17	2	1	2	1	1	1	1	2	11
18	1	2	1	0	1	0	0	2	07
19	1	1	1	1	2	1	1	3	11
20	2	2	2	2	2	2	2	2	16
21	1	1	2	2	2	3	2	3	16
22	2	2	2	1	3	4	2	2	18
23	2	1	1	2	2	2	2	2	14
24	2	2	2	3	4	3	1	1	18
25	2	2	3	3	3	2	2	3	20
26	1	1	0	1	2	2	1	2	10
27	1	1	2	1	2	2	2	2	13
28	2	2	2	4	3	1	2	4	20
29	4	2	2	2	3	3	3	4	23
30	2	1	2	2	1	0	0	1	09
31	1	1	2	2	3	3	2	3	17

TOOLANGI

MAGNETIC K-INDICES - OCTOBER 1979

Range for lower limit of K = 9 is 500 nT

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

MACQUARIE ISLAND

MAGNETIC K-INDICES - OCTOBER 1979

Range for lower limit of K = 9 is 1500 nT

Day	K-Indices								K-Sum
01	2	3	2	7	5	5	1	1	26
02	0	1	1	2	3	4	4	3	18
03	4	3	3	2	3	4	3	1	23
04	2	3	6	6	0	1	0	0	18
05	0	1	0	0	3	4	1	1	10
06	2	3	5	4	6	6	4	3	33
07	3	5	5	4	7	7	3	4	38
08	4	5	5	7	6	5	4	4	40
09	3	4	6	7	5	6	3	2	36
10	4	4	3	4	6	2	3	2	28
11	0	1	3	4	4	5	1	1	19
12	1	1	1	3	4	3	2	2	17
13	2	3	3	3	1	1	2	2	17
14	2	1	2	1	2	2	1	1	12
15	1	1	2	5	5	4	2	2	22
16	2	3	2	2	4	0	1	1	15
17	1	2	1	0	0	0	0	2	06
18	1	2	1	0	0	0	1	1	06
19	1	1	1	0	0	1	1	1	06
20	2	1	3	4	3	2	1	1	17
21	1	1	1	2	2	4	1	2	14
22	3	3	5	3	4	4	2	2	26
23	1	2	2	3	2	3	2	2	17
24	2	3	4	4	5	4	2	1	25
25	2	4	7	3	5	4	2	2	29
26	2	2	2	4	5	1	2	1	19
27	1	3	4	2	2	2	1	1	16
28	1	2	3	5	4	2	2	3	22
29	3	3	1	2	3	3	4	1	20
30	2	3	2	5	4	0	0	1	17
31	1	1	1	2	3	3	2	2	15

MAWSON

MAGNETIC K-INDICES - OCTOBER 1979

Range for lower limit of K = 9 is 1500 nT

Day	K-Indices								K-Sum
01	6	4	2	3	3	3	1	2	24
02	2	2	2	1	2	5	4	3	21
03	4	5	4	1	1	4	4	3	26
04	3	2	3	4	1	0	1	0	14
05	0	0	0	0	2	1	3	4	10
06	4	6	4	4	6	4	3	3	34
07	4	6	6	3	5	4	5	6	39
08	6	5	5	5	3	5	5	6	40
09	5	4	6	4	3	4	4	5	35
10	5	5	5	3	3	3	6	3	33
11	3	2	3	4	3	4	2	4	25
12	3	2	2	3	2	3	4	6	25
13	4	4	4	3	2	1	4	4	26
14	4	4	3	3	2	2	2	1	21
15	2	3	3	3	2	3	4	3	23
16	4	4	4	2	3	1	4	2	24
17	3	4	2	0	0	0	0	4	13
18	4	2	2	0	0	0	0	3	11
19	3	3	2	1	1	1	0	4	15
20	1	4	2	3	2	2	2	2	18
21	3	4	3	3	2	3	4	3	25
22	4	5	6	3	3	4	4	3	32
23	3	3	3	3	2	3	4	4	25
24	3	4	5	3	3	3	3	1	25
25	5	6	5	3	3	3	5	3	33
26	4	4	2	3	3	2	2	4	24
27	3	3	4	2	3	2	5	4	26
28	4	4	2	3	4	2	2	5	26
29	3	5	2	2	3	5	4	3	27
30	4	4	3	3	2	2	0	2	20
31	3	1	2	3	2	3	3	5	22

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PRINCIPAL MAGNETIC STORMS

OBSERVATORY	COMMENCEMENT				SSC AMPLITUDES			MAX 3h INDEX K			RANGES			UT END	
	d	h	min	TYPE	D(')	H(nT)	Z(nT)	d (3h-PERIOD)		K	D(')	H(nT)	Z(nT)	d	h
PORT MORESBY	06	11	20	ssc	+0.8	+38	+33	08 (4)		6	9	160	80	10	15
GNANGARA	06	11	21	ssc	+1.4	+34	+ 6	06 (4) 07 (4)		6 6	19	100	110	09	12
TOOLANGI	06	11	21	ssc	+0.4	+63	+10	06 (4,5) 07 (2,5) 08 (4) 09 (4)		5	12	170	50	09	12

OCTOBER 1979

PRELIMINARY MONTHLY MEAN VALUES

OBSERVATORY	H	D	Z	F
	nT	o '	nT	nT
PORT MORESBY	35976	06 27.3E	-23611	43032
GNANGARA	23431	03 17.3W	-53632	58527
CANBERRA	23838	12 06.1E	-53771	58818
TOOLANGI		not available		
MACQUARIE I	12741	28 21.7E	-63792	65052
MAWSON	18430	62 59.7W	-46855	50349
DAVIS		not available		
CASEY	9573	88 55.9W	-64483	65190

The values are derived from magnetograms for selected quiet days except at Davis and Casey where they are derived from semi-weekly absolute measurements.

SUDDEN COMMENCEMENTS AND OTHER RAPID VARIATIONS

OBSERVATORY	DAY	TYPE AND QUALITY	TIME	SENSE AND AMPLITUDE OF CHIEF MOVEMENT		
				H(nT)	D(nT)	Z(nT)
PORT MORESBY	06	ssc A	1120	+38	+ 8	+33
GNANGARA	06	ssc B	1121	+34	+ 9	+ 6
	19	sfe	0416-0423	+ 5	- 5	- 5
TOOLANGI	06	ssc B	1121	+63	+ 3	+10
	19	sfe	0417-0430	- 3	+13	

R79/271 (5).
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