

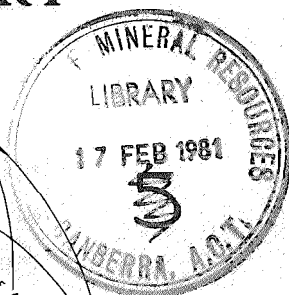
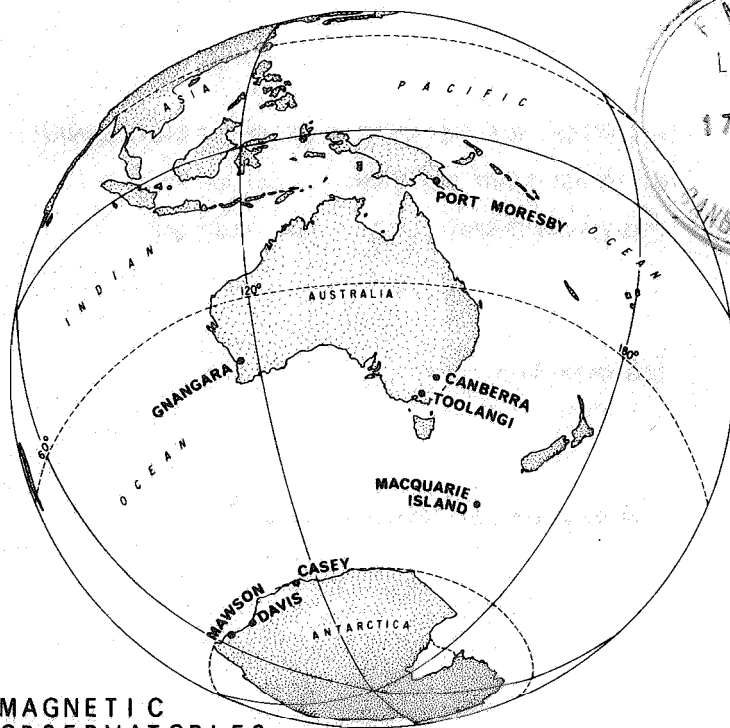
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BUREAU OF MINERAL RESOURCES,
GEOLOGY & GEOPHYSICS

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GEOPHYSICAL OBSERVATORY REPORT



MAGNETIC
OBSERVATORIES

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Volume 28, No.11
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DEPARTMENT OF NATIONAL DEVELOPMENT AND ENERGY

MINISTER: Senator The Hon. J.L. Carrick

SECRETARY: A. Woods

BUREAU OF MINERAL RESOURCES, GEOLOGY & GEOPHYSICS

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The observers at Casey and Davis are officers of the Antarctic Division (Department of Science and the Environment) and their contributions are gratefully acknowledged: they and the BMR geophysicists at Macquarie Island and Mawson are members of the Australian National Antarctic Research Expeditions (ANARE).

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:

GEOMAGNETISM & SEISMOLOGY 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	J.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	P.M. Davies	54°30'S	158°57'E	-61.1°	243.1°
MAWSON	B.A. Gaul	67°36'S	62°53'E	-73.1°	102.9°
DAVIS	P. Murrell	68°35'S	77°58'E	-76.7°	119.9°
CASEY	K. Lewis	66°17'S	110°32'E	-77.8°	179.1°

MAGNETOGRAPHS

		NOMINAL SCALE VALUES					
OBSERVATORY	TYPE	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.

*From 1 July 1979 Toolangi Observatory is only a variation observatory.

PORT MORESBY

MAGNETIC K-INDICES ~ NOVEMBER 1980

Range for lower limit of K = 9 is 300 nT

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

GNANGARA

MAGNETIC K-INDICES - NOVEMBER 1980

Range for lower limit of K = 9 is 450 nT

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

TOOLANGI

MAGNETIC K-INDICES - NOVEMBER 1980

Range for lower limit of K = 9 is 500 nT

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

MACQUARIE ISLAND

MAGNETIC K-INDICES - NOVEMBER 1980

Range for lower limit of K = 9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	2	2	4	4	3	3	1	1	20
02	0	0	0	1	3	2	1	0	07
03	0	0	0	3	2	0	0	0	05
04	0	1	1	5	2	0	1	0	10
05	0	0	0	0	0	0	0	0	00
06	0	1	1	0	1	1	0	1	05
07	1	1	0	0	0	0	0	0	02
08	0	0	0	0	0	0	0	0	00
09	0	1	1	0	5	4	2	1	14
10	1	2	1	4	6	2	0	1	17
11	1	2	2	2	2	3	6	2	20
12	2	2	2	3	3	0	1	1	14
13	0	0	0	1	0	0	1	1	03
14	0	0	0	4	5	5	1	1	16
15	2	5	5	6	5	6	2	2	33
16	2	2	3	6	5	5	1	0	24
17	1	0	2	4	4	2	1	2	16
18	2	2	4	5	5	5	1	2	26
19	1	2	4	3	4	5	3	0	22
20	1	1	4	3	5	5	3	1	23
21	0	3	2	2	1	1	1	1	11
22	1	1	1	1	0	0	0	0	04
23	1	1	0	0	0	2	2	1	07
24	1	3	2	2	1	2	1	2	14
25	3	2	2	1	6	5	2	1	22
26	2	4	2	6	6	2	1	1	24
27	2	2	3	5	6	4	1	1	24
28	2	3	3	6	5	3	2	2	26
29	1	2	6	5	4	2	1	1	22
30	2	2	1	4	5	4	5	2	25

MAWSONMAGNETIC K-INDICES - NOVEMBER 1980Range for lower limit of K = 9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	3	8	7	5	5	6	4	4	42
02	4	4	3	4	3	5	4	2	29
03	3	2	3	2	4	2	4	3	23
04	3	4	3	5	3	2	2	2	24
05	3	3	2	1	1	1	0	1	12
06	2	4	3	2	3	2	3	4	23
07	4	4	3	1	1	1	1	4	19
08	4	5	3	2	1	2	3	2	22
09	3	4	3	3	3	3	4	4	27
10	5	4	3	4	4	3	2	4	29
11	5	6	4	4	3	4	6	5	37
12	5	5	4	4	2	2	2	5	29
13	5	3	3	3	2	2	4	4	26
14	3	4	3	3	4	4	4	3	28
15	4	6	4	5	4	5	4	4	36
16	4	6	6	5	4	4	3	3	35
17	3	3	4	4	4	3	4	5	30
18	4	4	4	4	4	4	4	5	33
19	3	4	4	4	4	4	5	4	32
20	4	5	5	2	4	4	5	3	32
21	3	5	5	3	2	2	4	4	28
22	5	5	5	3	2	1	1	5	27
23	4	4	2	1	0	4	5	5	25
24	4	4	5	3	4	3	3	4	30
25	4	6	5	2	4	3	6	5	35
26	5	5	4	5	4	4	3	3	33
27	6	5	5	4	4	5	6	4	39
28	6	5	-	6	5	3	3	6	--
29	3	4	5	4	4	3	3	6	32
30	6	4	5	4	3	5	6	4	37

NOVEMBER 1980

PRELIMINARY MONTHLY MEAN VALUES

OBSERVATORY	H	D		Z	F
	nT	o	'	nT	nT
PORT MORESBY	35967	06	29.6E	-23661	43052
GNANGARA	23396	03	18.4W	-53668	58546
CANBERRA	23796	12	09.8E	-53771	58801
TOOLANGI		no absolute control			
MACQUARIE I	12727	28	31.7E	-63755	65013
MAWSON	18439	63	04.7W	-46763	50267
DAVIS		not available			
CASEY		not available			

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	sfe		0340-0425	+22	+33	+21
	07	ssc B		0203	+21	+5	+15
	09	ssc B		1122	+15	+1	+13
GNANGARA	07	ssc* B		0203	-2*	-25	-11
	09	ssc B		1122	+10	+11	+6
	14	ssc* B		1153	+20*	+4	+6
	24	ssc B		2257	+6	-15	-6
	26	si A		0422			
TOOLANGI	12	sfe		0450-0510	0	+21.6	0