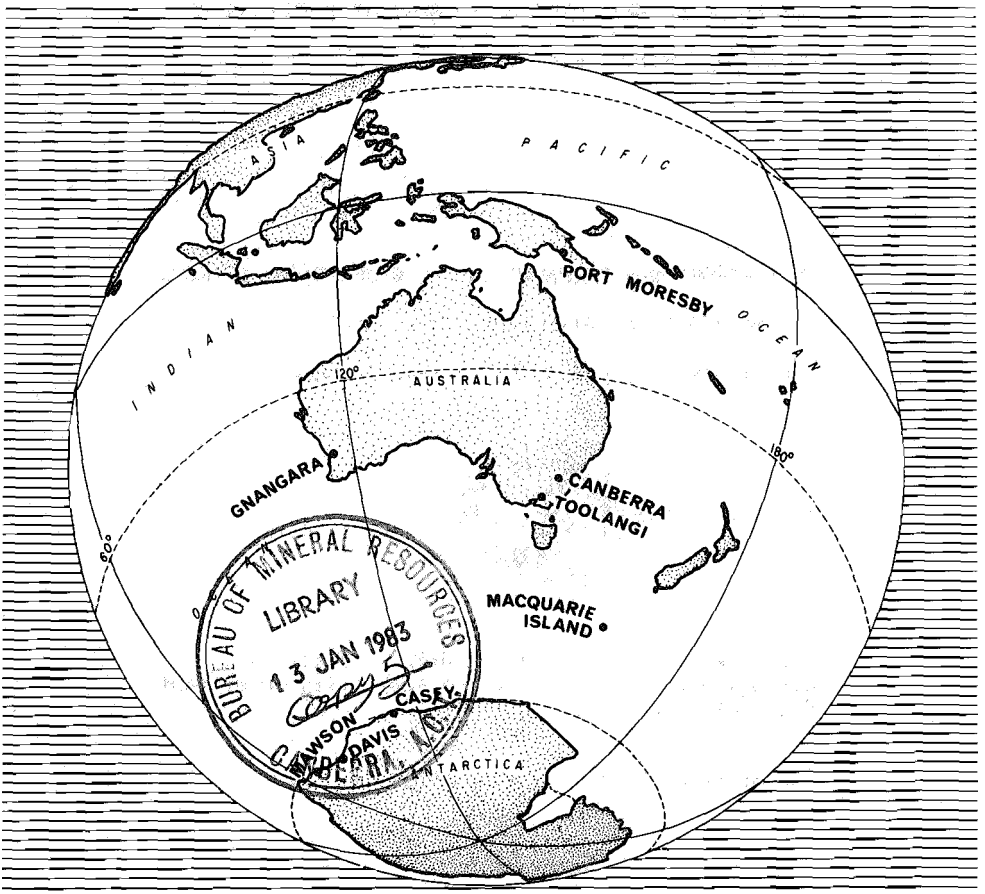
AUSTRALIA

GEOPHYSICAL OBSERVATORY REPORT



MAGNETIC OBSERVATORIES

VOLUME 30 NO 3
MARCH 1982
OF MINERAL RESOURCES, GEOLOGY & GEOPHYSICS

DEPARTMENT OF NATIONAL DEVELOPMENT AND ENERGY

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The observers at Casey and Davis are officers of the Antarctic Division (Department of Science and Technology) 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

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	I.J. Ferguson	54°30'S	158°57'E	-61.1°	243.1°
MAWSON	R.P. Silbestein	67°36'S	62°53'E	-73.1°	102.9°
DAVIS	F.W. Menk	68°35'S	77°58'E	-76.7°	119.9°
CASEY	N.I. Smith	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 0.1nT	I			

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 - MARCH 1982

Range for lower limit of K = 9 is 300 nT

Day	K-Indices								K-Sum
01	2	2	3	5	7	6	4	6	35
02	6	6	5	7	5	4	3	3	39
03	1	1	1	3	3	2	1	2	14
04	2	1	3	3	3	3	1	2	18
05	3	3	3	2	1	1	1	1	15
06	1	0	0	1	1	1	1	1	06
07	0	5	0	1	1	1	1	1	10
08	1	1	2	1	2	2	3	2	14
09	2	1	2	3	3	3	3	3	20
10	3	2	2	3	1	3	1	1	16
11	0	1	2	1	1	2	2	1	10
12	1	0	0	0	2	3	2	2	10
13	4	2	3	2	2	0	1	1	15
14	2	1	2	3	2	3	3	1	17
15	2	2	1	0	1	1	1	1	09
16	0	0	1	1	1	1	0	1	05
17	1	1	2	2	3	4	3	4	20
18	4	3	3	3	2	2	2	2	21
19	3	2	2	2	2	1	1	2	15
20	1	1	3	3	3	2	2	3	18
21	2	2	4	3	4	3	3	3	24
22	3	2	4	3	3	4	2	2	23
23	3	3	2	3	2	1	1	1	16
24	2	2	2	3	2	4	4	3	22
25	3	2	1	3	3	2	2	3	19
26	2	2	1	1	1	3	1	2	13
27	2	2	2	2	2	1	1	1	13
28	2	2	2	1	1	0	1	2	11
29	1	2	3	3	3	1	2	2	17
30	2	2	1	2	5	3	2	2	19
31	3	3	4	2	3	3	3	3	24

GNANGARA

MAGNETIC K-INDICES - MARCH 1982

Range for lower limit of K = 9 is 450 nT

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

CANBERRA

MAGNETIC K-INDICES - MARCH 1982

Range for lower limit of K = 9 is 450 nT

Day	K-Indices								K-Sum
01	2	2	4	5	5	7	3	6	34
02	5	5	6	7	5	4	3	2	37
03	2	2	2	3	3	2	2	2	18
04	1	1	3	4	3	3	1	1	17
05	2	4	4	3	2	1	1	1	18
06	0	0	0	0	1	0	1	0	02
07	1	3	1	1	1	0	0	2	09
08	2	2	1	1	2	2	2	3	15
09	3	2	3	3	3	3	3	3	23
10	2	3	3	4	1	3	2	1	19
11	1	3	3	1	2	2	2	2	16
12	0	0	1	1	2	3	3	2	12
13	4	3	2	2	2	0	1	1	15
14	2	2	1	3	3	3	3	1	18
15	2	2	2	0	0	2	0	1	09
16	0	1	1	1	1	1	0	1	06
17	0	1	2	2	3	3	3	3	17
18	3	4	3	3	2	2	2	2	21
19	2	2	2	1	1	0	0	2	10
20	1	2	3	3	3	3	2	2	19
21	1	3	4	4	4	3	3	3	25
22	3	4	4	4	3	4	3	3	28
23	2	2	2	2	3	1	1	1	14
24	2	2	1	3	2	3	3	2	18
25	2	3	2	3	3	2	2	3	20
26	2	2	1	2	2	3	1	2	15
27	2	3	2	3	3	1	1	0	15
28	2	3	2	1	1	0	0	1	10
29	1	3	4	2	1	1	2	3	17
30	2	2	2	4	4	3	1	2	20
31	2	3	3	2	2	4	4	3	23

TOOLANGI

MAGNETIC K-INDICES - MARCH 1982

Range for lower limit of K = 9 is 500 nT

Day	K-Indices								K-Sum
01	2	2	4	5	5	7	3	6	34
02	6	5	6	7	6	5	3	3	41
03	3	2	2	3	3	2	1	2	18
04	2	1	3	4	3	3	1	2	19
05	2	4	4	2	1	1	1	1	16
06	0	0	0	0	1	0	0	1	02
07	0	2	1	0	1	0	0	2	06
08	2	2	1	1	1	2	2	2	13
09	3	2	3	3	3	3	3	4	24
10	2	3	3	3	1	3	2	2	19
11	1	3	3	1	2	2	2	2	16
12	0	0	1	0	1	3	3	2	10
13	4	3	2	2	2	1	1	2	17
14	2	2	2	3	2	3	3	2	19
15	1	2	-	-	-	-	-	-	--
16	-	-	-	1	1	1	1	1	--
17	1	1	2	-	-	3	3	3	--
18	3	4	3	3	2	3	2	3	23
19	3	3	-	-	-	-	-	2	--
20	1	2	3	3	3	3	2	3	20
21	1	2	4	4	4	3	4	3	25
22	4	3	4	4	3	4	3	2	27
23	2	2	2	2	3	1	0	0	12
24	1	3	2	3	2	3	3	3	20
25	2	3	2	3	4	3	2	3	22
26	2	2	1	2	2	3	1	3	16
27	2	3	2	3	3	1	1	1	16
28	2	2	2	1	1	0	0	1	09
29	1	3	4	2	2	1	2	3	18
30	2	2	3	3	5	3	2	2	22
31	2	4	3	2	2	4	4	3	24

MACQUARIE ISLAND

MAGNETIC K-INDICES - MARCH 1982

Range for lower limit of K = 9 is 1500 nT

Day	K-Indices								K-Sum
01	-	-	-	-	-	-	-	-	--
02	6	7	7	7	7	7	5	4	50
03	3	3	2	5	5	4	2	2	26
04	2	1	2	6	5	3	2	2	23
05	3	5	5	4	2	1	0	0	20
06	0	0	0	0	1	2	0	1	04
07	1	2	0	0	1	0	0	2	06
08	3	2	1	2	2	3	3	3	19
09	3	3	2	5	4	5	4	3	29
10	5	4	6	5	2	4	2	1	29
11	2	5	4	1	5	3	3	1	24
12	1	1	1	1	1	5	3	2	15
13	4	4	4	4	4	2	1	1	24
14	2	2	1	4	3	5	5	2	24
15	2	2	3	3	2	1	0	1	14
16	1	1	1	2	1	0	0	1	07
17	0	1	2	4	5	3	2	2	19
18	3	3	4	5	3	4	2	2	26
19	3	3	3	3	2	0	1	1	16
20	0	3	3	5	6	5	3	2	27
21	1	4	6	6	6	6	4	3	36
22	5	5	5	5	5	4	4	2	35
23	1	2	2	3	4	1	0	1	14
24	1	2	1	3	2	4	4	3	20
25	3	3	3	6	6	4	2	2	29
26	2	2	1	4	2	3	3	2	19
27	2	2	2	4	4	0	1	1	16
28	2	2	1	0	0	0	0	1	06
29	1	5	6	5	1	0	1	2	21
30	2	4	2	6	6	4	2	2	28
31	4	5	4	5	5	6	6	3	38

MAWSON

MAGNETIC K-INDICES - MARCH 1982

Range for lower limit of K = 9 is 1500 nT

Day	K-Indices								K-Sum
01	3	4	4	5	6	6	3	7	38
02	7	7	8	7	4	4	6	5	48
03	6	3	2	4	3	2	5	3	28
04	2	2	4	4	3	2	2	4	23
05	4	5	6	3	2	1	2	3	26
06	2	2	1	0	0	0	0	2	07
07	3	3	1	0	0	2	1	2	12
08	5	4	3	2	2	3	3	4	26
09	4	3	3	3	2	5	3	6	29
10	5	6	5	4	3	2	2	5	32
11	3	4	5	3	2	4	5	4	30
12	3	4	2	1	2	4	5	4	25
13	5	4	4	2	1	2	5	4	27
14	4	3	2	2	2	4	7	4	28
15	4	5	3	1	0	1	3	3	20
16	4	5	3	1	1	0	2	2	18
17	1	2	2	2	3	4	2	4	20
18	5	5	5	3	3	3	6	5	35
19	6	4	3	2	2	0	2	4	23
20	3	3	5	3	2	3	4	5	28
21	3	5	5	3	4	6	6	3	35
22	7	5	6	3	3	4	3	2	33
23	3	3	2	3	3	2	1	2	19
24	3	-	-	3	2	4	4	2	--
25	5	5	5	4	3	4	4	5	35
26	3	3	2	3	3	4	2	6	26
27	3	4	2	1	2	1	2	2	17
28	2	5	4	1	1	0	1	2	16
29	4	5	6	3	3	1	2	5	29
30	4	6	4	3	3	3	2	5	30
31	6	5	4	3	4	5	4	6	37

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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	01	11	39	ssc	+0.9	+57	+48	01(5) 02(4)	7 7	12	320	110	03	00
GNANGARA	01	11	38	ssc*	+5.0	+72*	+35	01(5,6) 02(1,4,5)	6	34	260	290	03	00
CANBERRA	01	11	38	ssc	+1	+89	+12	01(6) 02(4)	7	35	330	165	03	01

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PRELIMINARY MONTHLY MEAN VALUES

OBSERVATORY	H	D	Z	F
	nT	o '	nT	nT
PORT MORESBY	35950	06 31.3E	-23695	43056
GNANGARA	23333	03 19.4W	-53704	58554
CANBERRA	23758	12 14.4E	-53767	58782
MACQUARIE I	12672	28 47.4E	-63707	64955
MAWSON	18433	63 19.6W	-46656	50165
DAVIS	16650	76 23.7W	-52681	55250
CASEY	9672	89 57.0W	-64402	65124

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	01	ssc A	1139	+57	+ 9	+48
GNANGARA	01	ssc*A	1138	+72*	+34	+35
CANBERRA	01	ssc B	1138	+89	+ 6	+12
	30	sfe	0533-0615	- 9	+16	- 9

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