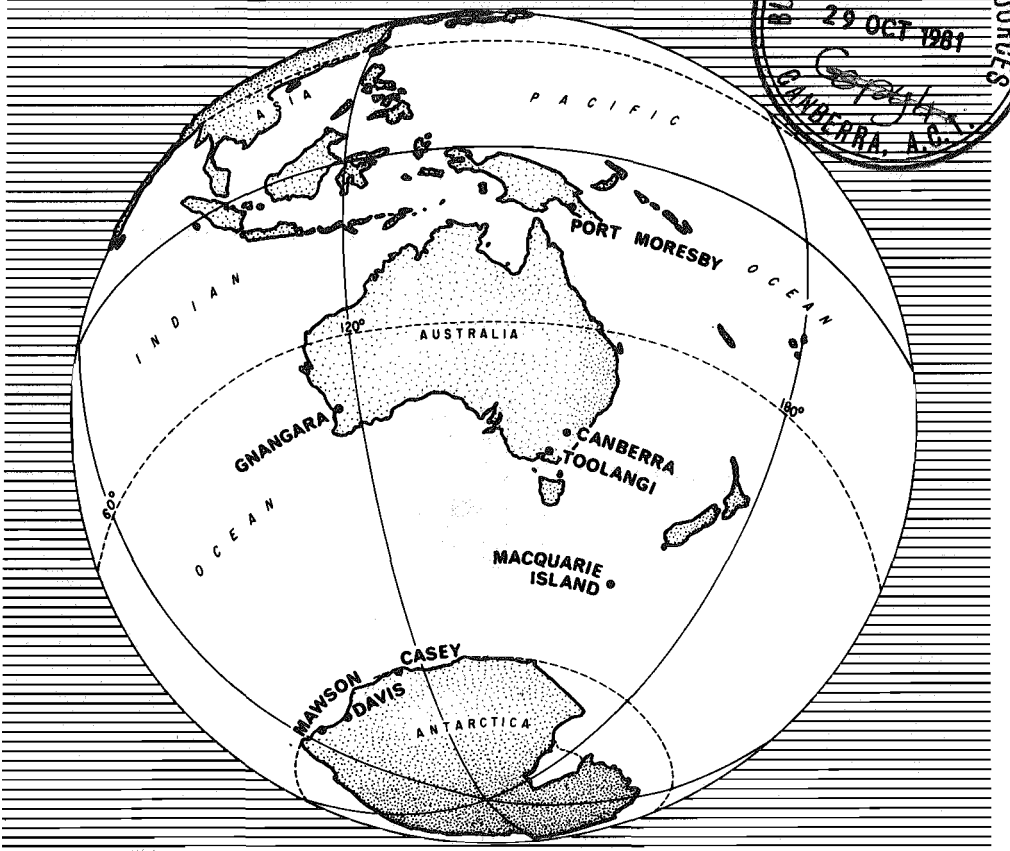
GEOPHYSICAL OBSERVATORY REPORT



MAGNETIC OBSERVATORIES

VOLUME 29 NO 6

JUNE 1981

BUREAU OF MINERAL RESOURCES, GEOLOGY & GEOPHYSICS

DEPARTMENT OF NATIONAL DEVELOPMENT AND ENERGY

MINISTER: Senator The Hon. J.L. Carrick

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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

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	W.J. Williams	54°30'S	158°57'E	-61.1°	243.1°
MAWSON	A.S. Marks	67°36'S	62°53'E	-73.1°	102.9°
DAVIS	R. Morris	68°35'S	77°58'E	-76.7°	119.9°
CASEY	E. Davis	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.

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

PORT MORESBY

MAGNETIC K-INDICES - JUNE 1981

Range for lower limit of K = 9 is 300 nT

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

GNANGARA

MAGNETIC K-INDICES - JUNE 1981

Range for lower limit of K = 9 is 450 nT

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

CANBERRA

MAGNETIC K-INDICES - JUNE 1981

Range for lower limit of K = 9 is 450 nT

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

TOOLANGI

MAGNETIC K-INDICES - JUNE 1981

Range for lower limit of K = 9 is 500 nT

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

MACQUARIE ISLAND

MAGNETIC K-INDICES - JUNE 1981

Range for lower limit of K = 9 is 1500 nT

Day	K-Indices								K-Sum
01	0	0	0	0	0	2	0	0	02
02	0	0	1	3	3	1	0	0	08
03	0	1	3	1	3	3	2	1	14
04	0	0	0	0	0	0	0	0	00
05	0	0	0	0	0	0	0	0	00
06	0	0	0	2	3	4	1	0	10
07	1	2	6	5	3	3	6	3	29
08	2	1	2	1	0	1	2	1	10
09	0	0	0	1	0	0	0	0	01
10	0	0	0	1	0	0	0	0	01
11	0	0	0	0	0	0	0	0	00
12	0	0	0	1	0	0	0	0	01
13	0	0	0	1	1	0	0	0	02
14	0	0	0	0	2	0	0	0	02
15	0	0	1	5	2	0	0	0	08
16	2	2	2	3	4	4	3	2	22
17	2	2	3	2	0	0	0	0	09
18	1	0	1	1	3	4	0	1	11
19	1	0	0	3	3	2	3	0	12
20	1	1	2	2	3	2	0	0	11
21	0	1	2	1	0	0	0	0	04
22	0	0	0	0	0	0	0	0	00
23	0	0	0	0	0	0	0	0	00
24	0	0	0	1	3	1	3	0	08
25	0	1	1	3	5	3	0	1	14
26	1	1	2	4	4	2	0	0	14
27	0	1	3	2	0	2	1	0	09
28	1	1	4	5	2	1	1	1	16
29	0	2	5	7	7	7	1	1	30
30	1	1	0	0	0	0	3	2	07

MAWSON

MAGNETIC K-INDICES - JUNE 1981

Range for lower limit of K = 9 is 1500 nT

Day	K-Indices								K-Sum
01	3	3	3	2	1	3	6	5	26
02	4	2	2	3	2	2	3	2	20
03	3	3	5	2	3	4	5	5	30
04	2	3	3	2	2	1	2	3	18
05	5	2	3	2	3	1	2	5	23
06	5	3	2	3	3	3	4	6	29
07	4	4	6	6	4	3	6	5	38
08	5	5	4	3	2	2	4	5	30
09	4	3	2	2	1	1	1	0	14
10	1	1	1	1	1	1	2	2	10
11	4	3	2	1	2	2	3	4	21
12	3	3	1	1	1	1	1	5	16
13	1	2	2	0	2	3	2	1	13
14	0	0	0	1	1	-	-	3	--
15	4	3	4	2	2	2	3	6	26
16	6	5	4	3	3	4	4	6	35
17	6	5	5	3	1	1	1	2	24
18	5	4	3	2	3	3	-	-	--
19	-	-	-	3	3	3	5	6	--
20	4	4	4	4	3	2	5	4	30
21	4	4	4	2	1	1	2	2	20
22	1	1	1	1	1	1	4	4	14
23	3	3	3	2	2	2	1	1	17
24	2	2	2	4	3	2	5	3	23
25	2	3	2	4	3	3	3	5	25
26	4	5	4	4	3	2	3	6	31
27	4	5	6	3	3	3	4	3	31
28	5	4	5	3	2	5	5	4	33
29	4	6	6	4	4	2	4	4	34
30	5	3	1	1	1	2	5	6	24

JUNE 1981

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	09	47	ssc	+0.3	+20	+18	07	(3)	5	7	120	70	08	10
	29	06	10	ssc	+0.5	+11	+8	29	(3,4)	5	7	170	70	30	07
GNANGARA								NIL							
TOOLANGI								NIL							

JUNE 1981

PRELIMINARY MONTHLY MEAN VALUES

OBSERVATORY	H	D	Z	F
	nT	o '	nT	nT
PORT MORESBY	35970	06 30.2E	-23674	43062
GNANGARA	23370	03 18.6W	-53685	58551
CANBERRA	23782	12 09.7E	-53772	58796
MACQUARIE I	12695	28 38.3E	-63742	64994
MAWSON	18454	63 15.5W	-46700	50214
CASEY		not available		

DAVIS MONTHLY MEAN VALUES 1981

A new observing station (C) is to be used from March 1981. Preliminary instrument corrections have been applied to the following values, the station difference has not.

	H	D	Z	F
JANUARY		N/A		
FEBRUARY		N/A		
MARCH	N/A	76 53.6W	-52950	NIL
APRIL	16616	76 18.4W	-52989	55533
MAY	16651	76 20.3W	-53013	55566
JUNE	16568	76 20.3W	-52859	55395

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 B	0947	+20	+3	+18
	29	ssc B	0610	+11	+5	+8
GNANGARA	06	ssc*B	0946	+14*	+6	+4
	29	ssc*B	0610	+16	+42*	+29*
TOOLANGI			NIL			

R79/1632 (9) Cat.No. 81 1713 7