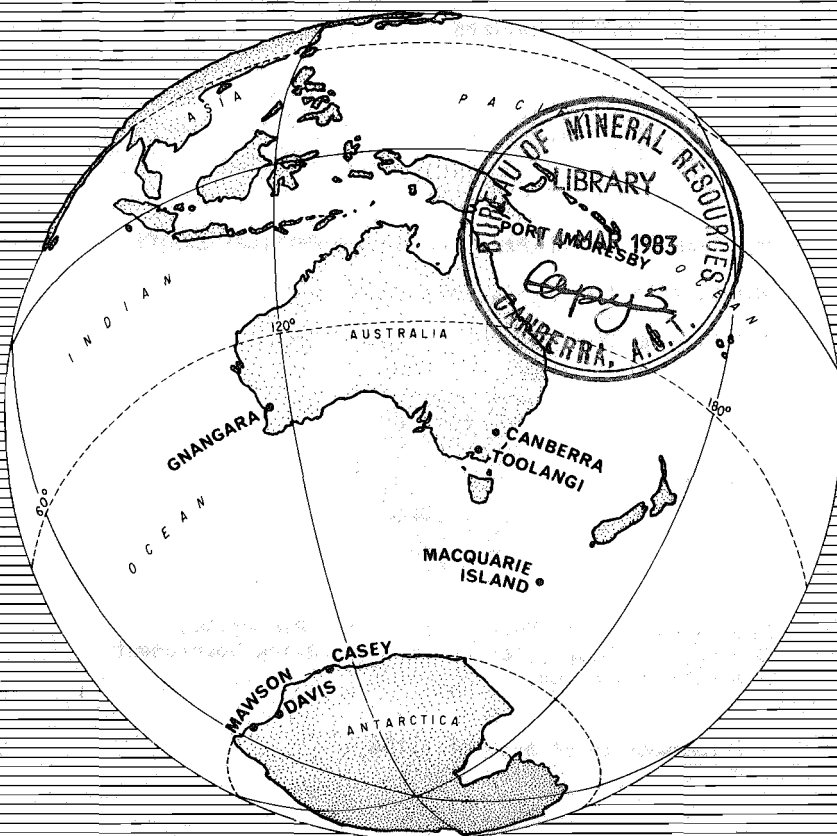


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DS **GEOPHYSICAL
OBSERVATORY REPORT**



MAGNETIC OBSERVATORIES

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**VOLUME 30 NO 7
JULY 1982**

BUREAU OF MINERAL RESOURCES, GEOLOGY & GEOPHYSICS

DEPARTMENT OF NATIONAL DEVELOPMENT AND ENERGY

MINISTER: Senator The Hon. Sir John Carrick, K.C.M.G.

SECRETARY: A. Woods

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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	I.J. Ferguson	54°30'S	158°57'E	-61.1°	243.1°
MAWSON	R.P. Silberstein	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°

MAGNETO GRAPHS

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 - JULY 1982

Range for lower limit of K = 9 is 300 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	3	2	3	2	3	2	2	3	20
02	2	3	3	2	2	1	2	1	16
03	2	2	1	2	2	2	1	1	13
04	1	1	1	0	0	0	0	0	03
05	2	2	1	1	2	1	1	2	12
06	3	2	3	4	2	3	3	3	23
07	3	3	2	3	3	3	3	2	22
08	2	3	2	3	2	3	2	2	19
09	3	3	3	2	1	2	2	2	18
10	2	2	2	2	3	2	1	1	15
11	2	2	2	5	4	5	3	3	26
12	2	2	2	3	4	4	4	3	24
13	3	4	4	5	2	7	6	8	39
14	8	5	6	6	5	4	3	3	40
15	3	2	3	5	3	2	2	2	22
16	2	2	3	5	2	5	2	5	26
17	5	3	3	5	3	0	1	3	23
18	3	3	2	3	3	3	2	1	20
19	3	2	3	3	4	3	1	4	23
20	3	4	4	2	2	0	1	2	18
21	1	1	2	1	1	1	1	2	10
22	3	1	2	2	4	3	2	1	18
23	2	1	2	3	3	2	2	2	17
24	3	4	3	4	3	5	5	3	30
25	4	4	4	4	3	2	2	2	25
26	2	3	4	3	3	2	2	3	22
27	3	5	5	2	2	4	2	1	24
28	3	3	3	4	2	3	2	1	21
29	4	2	5	3	5	2	2	3	26
30	2	1	3	3	3	2	3	3	20
31	2	3	4	6	3	3	2	2	25

GNANGARA

MAGNETIC K-INDICES - JULY 1982

Range for lower limit of K = 9 is 450 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	3	3	4	2	3	3	3	3	24
02	2	2	2	2	1	2	3	2	16
03	2	2	1	2	1	2	1	0	11
04	-	-	-	-	-	-	-	-	---
05	0	1	0	0	2	1	1	0	05
06	2	1	1	2	1	3	3	2	15
07	3	3	3	2	3	4	3	2	23
08	2	3	2	3	2	4	2	3	21
09	3	3	3	1	2	1	2	1	16
10	3	2	2	3	4	1	1	1	17
11	2	3	3	4	4	4	4	3	27
12	2	2	2	3	4	5	4	3	25
13	4	3	4	4	3	6	7	6	37
14	9	7	5	6	4	5	5	4	45
15	5	4	3	5	5	4	3	4	33
16	3	3	3	4	3	4	2	5	27
17	5	4	4	4	4	1	1	3	26
18	4	3	2	3	4	3	3	3	25
19	4	3	2	3	4	3	3	5	27
20	4	4	4	2	1	1	0	2	18
21	2	2	2	1	2	3	3	2	17
22	3	2	3	2	4	3	2	2	21
23	3	1	1	3	4	1	3	2	18
24	3	4	4	4	3	5	5	3	31
25	3	4	3	3	4	3	4	4	28
26	3	3	3	4	3	4	2	4	26
27	3	5	4	2	2	4	2	4	26
28	3	3	3	4	3	4	4	2	26
29	4	3	4	5	5	4	3	3	31
30	3	2	3	4	3	5	3	4	27
31	3	4	4	5	3	3	2	2	26

CANBERRA

MAGNETIC K-INDICES - JULY 1982

Range for lower limit of K = 9 is 450 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	3	3	4	2	3	2	2	3	22
02	2	2	3	3	2	1	2	1	16
03	2	2	1	3	1	2	1	0	12
04	0	1	0	0	0	0	0	0	01
05	0	0	0	1	2	1	0	0	04
06	2	1	2	2	2	3	3	2	17
07	3	3	2	2	3	5	4	1	23
08	2	3	2	3	3	3	2	2	20
09	2	2	2	2	1	1	1	1	12
10	2	2	2	3	4	1	1	0	15
11	2	2	2	5	3	3	3	3	23
12	1	1	1	2	4	5	4	3	21
13	2	4	5	5	3	(6)	(7)	(7)	(39)
14	(7)	(6)	5	7	5	5	4	4	(43)
15	3	3	4	5	5	4	3	3	30
16	2	3	3	5	2	5	1	4	25
17	4	3	3	4	4	0	0	3	21
18	3	3	3	4	3	2	2	1	21
19	3	1	2	3	4	3	2	3	21
20	4	2	3	2	1	0	0	1	13
21	1	1	1	1	0	2	2	2	10
22	3	2	3	1	4	3	1	1	18
23	2	1	1	3	3	2	2	2	16
24	2	3	4	4	3	5	5	2	28
25	3	4	4	3	3	2	3	3	25
26	3	3	3	4	4	3	2	3	25
27	2	4	4	2	2	4	1	2	21
28	1	2	4	4	3	3	3	1	21
29	4	1	4	5	5	4	2	2	27
30	1	3	4	3	3	4	3	3	24
31	2	4	5	5	2	3	1	2	24

TOOLANG!

MAGNETIC K-INDICES - JULY 1982

Range for lower limit of K = 9 is 500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	3	3	4	2	3	2	2	3	22
02	2	2	3	3	2	1	2	1	16
03	2	2	1	3	1	2	1	0	12
04	0	1	0	0	0	0	0	0	01
05	0	0	0	1	2	1	0	0	04
06	2	1	2	2	2	3	3	2	17
07	3	3	2	2	3	5	4	1	23
08	2	3	2	3	3	3	2	2	20
09	2	2	2	2	1	1	1	1	12
10	2	2	2	3	4	1	1	0	15
11	2	2	2	5	3	3	3	3	23
12	1	1	1	2	4	5	4	3	21
13	2	4	5	5	3	(6)	(7)	(7)	(39)
14	(7)	(6)	5	7	5	5	4	4	(43)
15	3	3	4	5	5	4	3	3	30
16	2	3	3	5	2	5	1	4	25
17	4	3	3	4	4	0	0	3	21
18	3	3	3	4	3	2	2	1	21
19	3	1	2	3	4	3	2	3	21
20	4	2	3	2	1	0	0	1	13
21	1	1	1	1	0	2	2	2	10
22	3	2	3	1	4	3	1	1	18
23	2	1	1	3	3	2	2	2	16
24	2	3	4	4	3	5	5	2	28
25	3	4	4	3	3	2	3	3	25
26	3	3	3	4	4	3	2	3	25
27	2	4	4	2	2	4	1	2	21
28	1	2	4	4	3	3	3	1	21
29	4	1	4	5	5	4	2	2	27
30	1	3	4	3	3	4	3	3	24
31	2	4	5	5	2	3	1	2	24

MACQUARIE ISLAND

MAGNETIC K-INDICES - JULY 1982

Range for lower limit of K = 9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	4	3	4	5	5	4	3	4	32
02	3	4	3	4	3	2	2	1	22
03	2	2	2	4	0	1	0	0	11
04	0	0	0	1	1	1	0	0	03
05	0	0	0	1	1	1	0	0	03
06	1	0	2	4	2	4	4	1	18
07	3	4	4	(4)	4	5	5	1	(30)
08	2	3	3	5	4	4	2	1	24
09	3	2	3	3	4	1	1	1	18
10	2	2	2	3	5	1	0	0	15
11	2	2	1	5	5	5	5	3	28
12	3	3	2	5	7	7	6	2	35
13	4	6	6	7	5	(8)	(8)	8	(52)
14	8	6	7	8	6	7	6	6	54
15	4	4	5	6	6	5	5	4	39
16	4	3	6	6	4	6	2	5	36
17	5	5	4	4	6	1	0	2	27
18	3	4	3	6	6	4	3	2	31
19	3	2	2	2	5	5	2	3	24
20	5	4	4	4	2	1	0	1	21
21	1	2	1	0	3	3	1	2	13
22	3	2	3	3	7	6	1	0	25
23	2	2	1	4	5	2	3	1	20
24	2	5	6	5	5	7	7	3	40
25	3	5	4	6	6	4	4	3	35
26	4	4	5	6	5	6	2	2	34
27	3	5	6	5	4	5	2	3	33
28	4	4	4	6	4	5	5	2	34
29	3	3	5	7	7	6	2	2	35
30	2	2	6	6	5	6	5	3	35
31	3	4	6	7	5	4	3	2	34

MAWSONMAGNETIC K-INDICES - JULY 1982Range for lower limit of K = 9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	6	6	6	4	3	3	6	6	40
02	4	5	6	3	3	2	4	4	31
03	3	4	2	2	2	0	3	3	19
04	3	3	1	0	0	0	1	4	12
05	2	2	1	1	2	2	2	0	12
06	2	2	2	3	2	4	5	4	24
07	4	5	4	3	3	6	5	3	33
08	2	5	5	4	3	4	3	6	32
09	5	5	3	3	2	3	3	4	28
10	6	5	4	3	3	3	2	1	27
11	3	3	3	5	5	5	6	7	37
12	5	5	3	3	5	7	4	6	38
13	6	6	5	6	5	7	7	8	50
14	9	8	6	5	5	6	7	6	52
15	6	6	5	4	4	4	5	6	40
16	6	5	5	6	3	5	4	6	40
17	7	4	4	4	2	1	2	6	30
18	6	3	3	5	5	3	3	3	31
19	6	3	5	3	4	4	5	5	35
20	7	7	5	3	0	1	2	4	29
21	4	3	2	1	2	1	6	6	25
22	4	1	3	2	3	4	3	5	25
23	5	5	3	2	4	4	3	3	29
24	4	7	5	5	4	8	6	4	43
25	6	6	5	4	3	3	6	6	39
26	5	6	5	4	3	3	4	5	35
27	6	5	5	4	3	3	2	6	34
28	6	6	5	5	3	4	6	5	40
29	6	4	5	4	4	3	3	6	35
30	3	4	5	4	3	4	2	6	31
31	3	6	5	4	3	3	4	6	34

JULY 1982

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	11	09	53	ssc	-0.7	+29	+21	11(4,6)		5	5	100	50	12	00
	13	16	17	ssc	+0.4	+83	+80	13(8) 14(1)		8	18	480	240	15	16
	16	15	18	ssc	+0.6	+48	+42	16(6,7) 17(1,4)		5	7	130	80	17	15
GNANGARA	13	16	18	ssc*	-4.5*	+76	+21*	13(8) 14(1)		9	116	420	540	16	13
CANBERRA	13	16	16	ssc	..	+101	+23	13(8) 14(1)		9	53	970	250	15	18

JULY 1982

PRELIMINARY MONTHLY MEAN VALUES

OBSERVATORY	H	D	Z	F
	nT	o	nT	nT
PORT MORESBY	35930	06 31.8E	-23704	43045
GNANGARA	23327	03 19.4W	-53714	58561
CANBERRA	23751	12 14.1E	-53766	58778
MACQUARIE I	12672	28 48.9E	-63710	64958
MAWSON	18426	63 22.9W	-46615	50125
DAVIS	16552	76 30.0W	-52581	55125
CASEY	9623	90 16.0W	-64341	65057

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	11	ssc B	0953	+29	-7	+21
	13	ssc A	1617	+83	+4	+80
	16	ssc A	1518	+48	+6	+42
GNANGARA	13	ssc*A	1618	+76	-31*	+21*
	16	ssc B	2110	+24	+44	+32
CANBERRA	13	ssc B	1616	+101	..	+23

GEOPHYSICAL OBSERVATORY REPORT VOLUME 30 NO 7 (JULY 1982)