

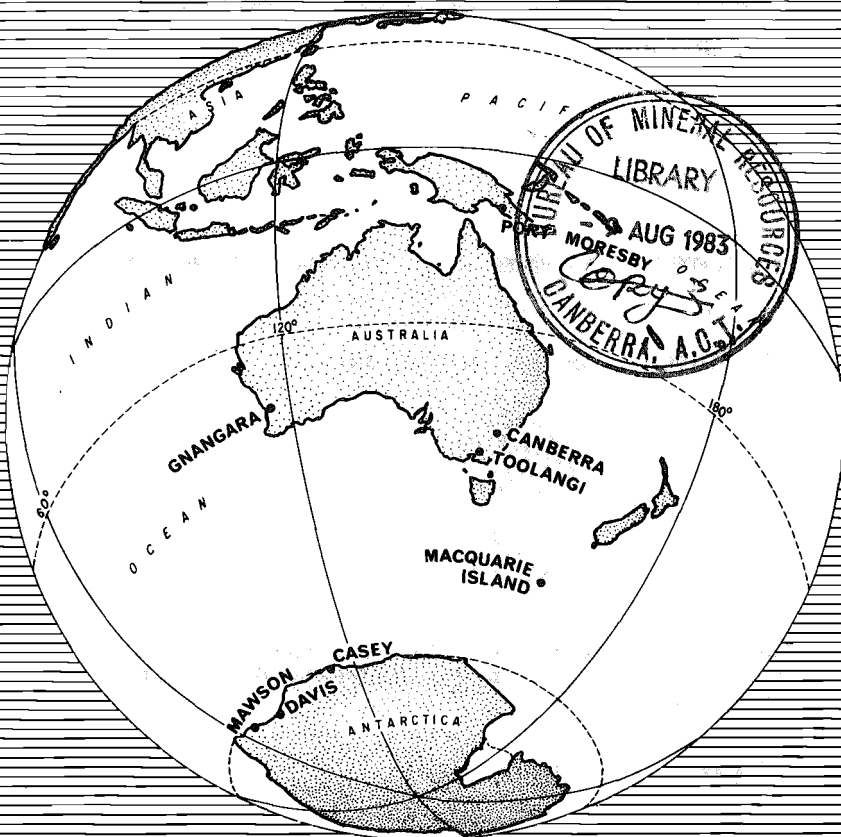
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GEOPHYSICAL OBSERVATORY REPORT



MAGNETIC OBSERVATORIES

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NOVEMBER 1982

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 IAGA. 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 SECTION
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	P.A. Hopgood	35°19'S	149°22'E	-44.0°	224.7°
*TOOLANGI	P.A. Hopgood	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°

MAGNETOGRAPHS

OBSERVATORY	CODE	TYPE	ELEMENT/SCALE		VALUE
PORT MORESBY	PMG	La Cour (A)	H/3	D/5	Z/4
GNANGARA	GNA	Eschenhagen (A)	H/3	D/7	Z/6
CANBERRA	CNB	Elsec digital (D1)			
TOOLANGI	TOO	La Cour (A)	H/5	D/6	Z/5
MACQUARIE I	MCQ	La Cour (A)	H/20	D/9	Z/21
MAWSON	MAW	La Cour (A)	H/21	D/13	Z/22

Scale values are in nT/mm

A = analogue, 20 mm/hr

D1 = digital, 1 min readings, 0.1 nT resolution

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.

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

PORT MORESBY

MAGNETIC K-INDICES - NOVEMBER 1982

Range for lower limit of K = 9 is 300 nT

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

GNANGARAMAGNETIC K-INDICES - NOVEMBER 1982Range for lower limit of K = 9 is 450 nT

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

CANBERRAMAGNETIC K-INDICES - NOVEMBER 1982Range for lower limit of K = 9 is 450 nT

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

TOOLANGI

MAGNETIC K-INDICES - NOVEMBER 1982

Range for lower limit of K = 9 is 500 nT

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

MACQUARIE ISLANDMAGNETIC K-INDICES - NOVEMBER 1982Range for lower limit of K = 9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	5	2	6	6	7	5	6	2	39
02	4	3	4	7	6	7	5	3	39
03	4	5	6	6	5	1	0	0	27
04	1	0	5	6	4	3	1	2	22
05	2	1	1	3	5	5	2	2	21
06	2	2	4	3	3	3	1	1	19
07	2	1	2	2	3	0	0	2	12
08	2	2	2	3	2	4	4	2	21
09	3	4	2	1	1	1	2	2	16
10	3	2	2	4	6	3	4	3	27
11	4	4	4	5	6	6	3	3	35
12	3	3	1	4	5	3	3	2	24
13	4	4	3	6	2	4	4	2	29
14	2	2	3	6	5	6	2	2	28
15	2	2	1	6	5	7	3	2	28
16	2	4	4	2	2	0	2	3	19
17	1	1	1	0	0	1	1	2	07
18	2	3	2	5	7	6	2	2	29
19	2	3	1	1	4	4	2	2	19
20	2	3	0	2	1	0	2	2	12
21	3	5	5	5	4	4	5	5	36
22	6	6	6	4	3	1	2	1	29
23	2	2	1	4	6	7	7	6	35
24	4	4	3	5	8	7	8	6	45
25	6	6	7	5	6	6	5	3	44
26	5	5	6	6	7	7	3	3	42
27	3	3	3	6	7	5	3	2	32
28	5	5	5	6	5	5	5	3	39
29	3	3	3	6	6	7	7	4	39
30	5	4	5	2	5	3	1	1	26

MAWSON

MAGNETIC K-INDICES - NOVEMBER 1982

Range for lower limit of K = 9 is 1500 nT

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
01	7	5	5	4	4	6	6	4	41
02	3	4	4	3	5	7	5	6	37
03	5	7	6	5	4	1	1	1	30
04	2	3	3	4	3	4	6	3	28
05	4	4	3	3	4	3	6	2	29
06	3	5	5	5	3	3	3	3	30
07	3	5	3	1	2	1	2	2	19
08	3	4	3	2	3	3	4	2	24
09	4	4	3	2	3	2	1	3	22
10	3	4	3	3	3	4	4	3	27
11	5	5	4	5	4	3	4	5	35
12	6	4	4	4	4	3	6	3	34
13	6	4	4	4	4	3	7	3	35
14	4	4	4	4	4	4	4	5	33
15	5	5	3	4	4	4	6	5	36
16	3	4	4	3	2	1	4	5	26
17	3	-	-	-	1	3	4	5	--
18	4	5	3	2	4	4	3	5	30
19	5	5	2	2	4	2	4	6	30
20	3	3	2	3	3	2	3	4	23
21	5	6	6	5	4	4	4	6	40
22	5	5	6	4	2	2	2	3	29
23	2	2	2	3	5	7	7	5	33
24	5	4	3	6	7	6	7	7	45
25	6	5	6	7	6	7	6	6	49
26	4	7	5	5	5	5	3	6	40
27	4	5	4	5	5	5	6	3	37
28	8	5	5	5	4	4	4	6	41
29	4	3	4	5	5	7	4	5	37
30	4	5	5	3	5	4	1	2	29

NOVEMBER 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	23	09	17	ssc	+0.5	+23	+21	24(5,8)	7	No record			25 Nov.	..
	29	10	..	...	..	..	..	29(7)	6	10	120		50	30 09
GNANGARA	23	09	17	ssc*	+1.6*	+16*	+ 5*	23(8)	7	28	120	120	24	09
	24	09	22	ssc	+8.7	+92	+41	24(6)	7	47	230	230	28	09
CANBERRA	23	09	16	ssc*	-2.0*	+28*	+ 7	23(8)	6	24	165	75	24	06
	24	09	20	ssc	-1.7	+75*	+ 9	24(5)	7	39	290	120	28	13
	29	10	..	...	..	..	..	29(7)	5	20	110	60	30	06

NOVEMBER 1982

PRELIMINARY MONTHLY MEAN VALUES

OBSERVATORY	H	D	Z	F
	nT	o	nT	nT
PORT MORESBY	35930	06 31.6E	-23712	43049
GNANGARA	23317	03 20.1W	-53724	58566
CANBERRA	23744	12 14.8E	-53766	58776
MACQUARIE I	12661	28 52.2E	-63707	64953
MAWSON	18482	63 21.6W	-46582	50115
DAVIS	16636	76 22.6W	-52531	55102
CASEY	9643	90 17.0W	-64404	65122

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	23	ssc B	0917	+23	+ 5	+21
GNANGARA	23	ssc*B	0917	+16*	+11*	+ 5*
	24	ssc B	0922	+92	+59	+41
CANBERRA	23	ssc*A	0916	+28*	-14*	+ 7*
	24	ssc A	0920	+75	-12	+ 9
	30	ssc B	1211	+30	+ 8	+ 4