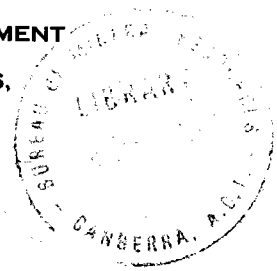


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COMMONWEALTH OF AUSTRALIA  
DEPARTMENT OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS



# GEOPHYSICAL OBSERVATORY REPORT

VOL. 13

No. 7

JULY

1965

*Issued under the authority of the Hon. David Fairbairn,  
Minister for National Development*

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DEPARTMENT OF NATIONAL DEVELOPMENT

Minister - Hon. David Fairbairn, D.F.C., M.P.

Secretary - R.W. BOSWELL

BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS

Director - J.M. RAYNER

This Report was prepared in the Geophysical Branch;

Assistant - Director L.S. PRIOR

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Unless otherwise stated all times are given in  
Greenwich Mean Time

The terminology used in this report is that accepted by  
international convention. Should further information be  
required, explanation can be obtained by applying to:-

Assistant Director (Geophysics),  
Bureau of Mineral Resources,  
P.O. Box 378,  
CANBERRA CITY, A.C.T.

## CONTRIBUTING OBSERVATORIES

### GNANGARA MAGNETIC OBSERVATORY

P.M. McGregor, Observer in Charge

Geographic Latitude	31°47'S	Longitude	115°57'E
Geomagnetic Latitude	-43.2°	Longitude	185.8°

#### Instruments

Askania magnetometer No.508810  
La Cour QHMs No.291, 292, 293  
La Cour BMZ No.120  
Eschenhagen D, H & Z recording variometers

Sensitivity	:	D 1.1 min/mm
		H 2.5 Y/mm
		Z 5.2 Y/mm
Recording speed	:	20 mm/hour

Askania (Eschenhagen type)H variometer with visual recorder

Sensitivity	:	3 Y/mm
Recording speed	:	20 mm/hour

### MACQUARIE ISLAND MAGNETIC OBSERVATORY

R.G. Sutton, Observer in Charge

Geographic Latitude	54°30'S	Longitude	158°57'E
Geomagnetic Latitude	-60.7°	Longitude	243.0°

#### Instruments

Askania declinometer No.640505  
La Cour QHMs Nos.177, 178, 179  
La Cour BMZ No.64  
La Cour D, H & Z recording variometers

Standard instrument: Sensitivity	:	D 2.4 min/mm
		H 24.8 Y/mm
		Z 20.6 Y/mm
Recording speed	:	15 mm/hour

Rapid-run instrument: Sensitivity

Sensitivity	:	D 1.0 min/mm
		H 5.4 Y/mm
		Z 9 Y/mm
Recording speed	:	180 mm/hour

## CONTRIBUTING OBSERVATORIES

### MAWSON MAGNETIC OBSERVATORY

J. Haigh, Observer in Charge

Geographic Latitude 67°36'S                      Longitude 62°53'E  
Geomagnetic Latitude -73.2°                      Longitude 103.1°

#### Instruments

Askania declinometer No.630332

La Cour QHMs Nos.300, 301, 302

La Cour BMZ No.62

La Cour D, H & Z recording variometers

Normal sensitivity : D 0.9 min/mm

H 9.6 Y/mm

Z 10.0 Y/mm

Recording speed : 15 mm/hour

Low sensitivity : D 2.4 min/mm

H 51 Y/mm

Z 50 Y/mm

Recording speed : 15 mm/hour

Bar fluxmeter D magnetograph

Recording speed : 5 mm/minute

### PORT MORESBY MAGNETIC OBSERVATORY

J.A. Brooks, Observer in Charge

Geographic Latitude 9°24'S                      Longitude 147°09'E  
Geomagnetic Latitude -18.7°                      Longitude 218.0°

#### Instruments

Askania declinometer No.580333

La Cour QHMs Nos.187, 188, 189

La Cour BMZ No.68

La Cour D, H & Z recording variometers

Standard instrument : Sensitivity : D 0.44 min/mm

H 2.8 Y/mm

Z 3.3 Y/mm

Recording speed : 15 mm/hour

Rapid-run instrument: Sensitivity : D 0.05 min/mm

H 1.2 Y/mm

Z 0.3 Y/mm

Recording speed : 180 mm/hour

## CONTRIBUTING OBSERVATORIES

### TOOLANGI MAGNETIC OBSERVATORY

C.A. van der Waal, Observer in Charge

Geographic Latitude	37°32'S	Longitude	145°28'E
Geomagnetic Latitude	-46.7°	Longitude	220.8°

#### Instruments

Ruska magnetometer No.4813  
La Cour QHMs Nos.288, 289, 290  
La Cour BMZ No.119  
La Cour D, H & Z recording variometers

Sensitivity	:	D 1.2 min/mm
		H 4.5 Y/mm
		Z 4.4 Y/mm
Recording speed	:	15 mm/hour

### WILKES MAGNETIC OBSERVATORY

P.J. Browne-Cooper, Observer in Charge

Geographic Latitude	66°15'S	Longitude	110°31'E
Geomagnetic Latitude	-77.2°	Longitude	179.2°

#### Instruments

C.I.W. field magnetometer and theodolite earthinductor No.28  
La Cour QHMs Nos.492, 493, 494  
La Cour BMZ No.236  
Ruska D, H & Z recording variometers

Standard Instrument : Sensitivity	:	D 10 min/mm
		H 24.9 Y/mm
		Z 20.8 Y/mm
Recording speed	:	20 mm/hour
Rapid-run instrument: Sensitivity	:	D 1.1 min/mm
		H 5.1 Y/mm
		Z 7 Y/mm
Recording speed	:	240 mm/hour

M A W S O N

MAGNETIC K-INDICES - JULY 1965

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	7	4	5	5	2	2	6	5	36
2	3	4	4	3	4	2	2	5	27
3	5	4	3	2	1	1	6	5	27
4	3	3	3	1	0	1	0	5	16
5	4	1	2	2	1	0	1	3	14
6	2	6	5	5	3	4	4	6	35
7	5	5	3	3	2	1	4	5	28
8	5	6	2	2	3	4	6	5	33
9	6	6	2	3	3	3	2	3	28
10	6	7	5	4	2	2	2	3	31
11	1	3	2	0	0	1	2	3	12
12	2	1	0	0	1	2	3	3	12
13	1	1	2	2	2	1	4	1	14
14	5	4	1	1	1	1	3	5	21
15	4	4	3	3	3	3	4	6	30
16	4	3	2	2	0	1	3	3	18
17	1	0	1	0	3	0	1	0	06
18	1	0	0	0	0	4	5	4	14
19	3	3	5	4	4	4	5	4	32
20	3	2	1	2	2	3	5	7	25
21	3	3	4	1	1	0	0	0	12
22	1	3	2	1	1	0	0	5	13
23	3	4	5	3	2	3	4	6	30
24	3	4	4	4	3	3	4	3	28
25	4	4	3	3	2	1	2	2	21
26	2	4	3	1	2	1	1	3	17
27	3	3	2	2	1	3	5	5	24
28	4	5	6	5	3	3	5	6	37
29	5	5	4	4	4	3	7	3	35
30	4	4	3	2	1	2	1	5	22
31	4	2	1	0	0	0	3	3	13

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	Y	°	Y
July	18361	61 13.8W	-48378

W I L K E S

MAGNETIC K-INDICES - JULY 1965

Range for lower limit of K=9 is 2500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	3	3	2	2	2	1	2	2	17
2	2	2	1	1	1	4	2	1	14
3	2	2	1	0	0	0	2	1	08
4	2	2	1	0	0	0	0	0	05
5	0	0	1	1	0	0	1	0	03
6	1	3	3	2+	3	1	2	1	16+
7	2	2	1	1	0	0	2	2	10
8	2	3	2	1	0	3	4	2	17
9	2	2	2	1	1	2	1	1	12
10	2	2	2	1	1	1	1	0	10
11	1	2	1	0	0	0	0	0	04
12	0	1	0	0	0	0	1	1	03
13	2	2	2	1	1	0	2	1	11
14	1	1	2	0	0	2	1	1	08
15	3	3	2	1	0	0	0	2	11
16	2	2	1	0	0	0	0	0	05
17	0	1	0	0	0	0	0	0	01
18	0	0	0	0	0	1	2	1	04
19	1	2	2	1	2	1	1	1	11
20	1	2	1	0	0	2	2	2	10
21	1	2	1	0	0	0	0	0	04
22	1	1	1	1	0	0	0	1	05
23	1	2	1	1	0	1	2	2	10
24	2	3	2	2	2	0	1	1	13
25	2	2	1	1	0	0	0	0	06
26	0	2	1	0	0	0	0	0	03
27	1	1	1	1	0	2	1	1	08
28	3	3	3	1	1	0	2	1	14
29	2	3	3	2	2	5	6	2	25
30	3	2	2	1	0	0	0	1	09
31	2	2	1	0	0	0	1	0	06

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	YY	°	Y
July	9226	86 16.5W	-64718



MACQUARIE ISLAND

MAGNETIC K-INDICES - JULY 1965

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	3	1	5	4	5	1	0	1	20
2	0	0	1	3	2	1	0	0	07
3	0	0	2	0	0	0	0	0	02
4	0	0	0	0	0	0	0	0	00
5	0	0	0	0	0	0	0	0	00
6	0	5	4	6	6	5	3	1	30
7	1	1	0	2	0	1	0	0	05
8	1	2	1	0	0	4	5	3	16
9	2	1	1	2	1	2	0	0	09
10	0	5	4	5	5	0	0	0	19
11	0	0	0	0	0	0	0	0	00
12	0	0	0	0	0	0	0	1	01
13	0	0	1	2	2	1	0	0	06
14	0	0	0	1	0	1	0	0	02
15	0	1	2	4	4	1	0	0	12
16	1	0	0	0	0	0	0	0	01
17	0	0	0	2	0	0	0	0	02
18	0	0	0	0	0	0	1	0	01
19	1	0	5	6	5	6	2	1	26
20	0	0	0	1	0	2	2	1	06
21	1	0	0	0	0	0	0	0	01
22	0	0	0	0	0	0	0	0	00
23	0	1	2	0	3	3	2	1	12
24	0	1	2	5	3	0	0	0	11
25	0	1	2	0	0	1	0	0	04
26	0	0	0	0	0	0	0	0	00
27	0	0	0	0	3	2	1	1	07
28	3	4	6	3	2	0	1	1	20
29	1	4	4	3	5	4	4	2	27
30	0	1	1	0	0	0	0	0	02
31	0	0	0	0	0	0	0	0	00

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	Y	°	Y
July	13.148	26 28.3E	-64214

M A C Q U A R I E I S L A N D

PRINCIPAL MAGNETIC STORMS - MARCH - NOVEMBER 1964

date	storm time		sudden commencements				act- iv- ity	max. activity			Ranges		
	begin	end	type	amplitudes				0 to 9		D	H	Z	
	h m	d h		D	H	Z		day	3-hr. per. K				
<u>March</u>													
03	1923	0617	-2	-2	-4	+4	ms	04	5,6, 7	7	211	1380	810
22	08..	2320	...				ms	22	5, 6	5	91	660	570
29	20..	3019	...				ms	23 30	4,6 4	7	87	1070	560
<u>April</u>													
01	1211	0319	ssc	+2	-28	+23	ms	01	6,7, 7	8	152	1080	640
27	06..	2815	...				s	02 03 28	4 4	8	180	1220	890
<u>May</u>													
10	12..	1112	...				ms	10	6	6	61	640	400
13	13..	1614	...				s	14	5,6	8	134	1280	520
23	....	*2602	...				ms	24 25	5 4,5, 6	6	103	800	610
* No record from 1500 hrs 23rd to 0115 hrs 24th													
<u>June</u>													
10	02..	1313	...				ms	10	3	7	128	760	650
20	10..	21(11)	...				ms	20	5	6	86	540	300
<u>July</u>													
17	11..	1911	...				ms	18	4	7	117	1040	620
<u>August</u>													
04	0130	0606	ssc*	+2*	-15*	-11*	ms	04	2,3, 6	5	112	810	400
31	(05..)	02(14)	...				ms	05 31	5 4,5	6	89	750	540
		Sept.					Sept.		3				
<u>September</u>													
06	1954	1005	ssc*	-2*	+6*	-3*	ms	07 08	4 4	7	173	1130	560
27	21..	2823	...				s	28	5	8	223	1310	990

M A C Q U A R I E I S L A N D

PRINCIPAL MAGNETIC STORMS - MARCH - NOVEMBER 1964 CONTD.

date	storm time		sudden commencements			act- ivity	max. activity 0 to 9			Ranges			
	begin	end	type	amplitudes			day	3-hr per. K	D	H	Z		
	h m	d h		D	H							Z	
<u>October</u>													
03	1128	0602	ssc	0	-3	+4	ms	03	5,6	6	75	660	540
								04	4,6	6			
								05	4,5	6			
18	1151	2005	...				ms	19	6	7	142	980	640
<u>November</u>													
23	03..	2319	...				ms	23	6	7	181	1100	890

T O O L A N G I

MAGNETIC K-INDICES - JULY 1965

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>							<u>K-Sum</u>
1	3	2	4	4	3	2	2	22
2	1	2	2	3	2	1	1	13
3	2	1	1	0	0	0	2	07
4	1	1	0	0	0	0	0	02
5	0	0	0	0	0	0	0	01
6	1	4	3	4	4	3	2	22
7	1	1	1	1	0	1	1	08
8	3	4	2	2	2	4	4	24
9	2	3	2	2	1	2	2	16
10	2	4	3	4	3	2	1	19
11	0	1	0	0	0	0	0	01
12	0	0	0	0	0	1	2	05
13	1	1	2	2	2	1	1	11
14	1	1	0	0	0	2	0	04
15	1	2	3	3	3	1	1	15
16	1	1	0	0	0	0	0	02
17	0	0	0	1	0	0	0	01
18	0	0	0	0	0	3	2	06
19	2	2	4	3	3	4	2	21
20	0	0	1	2	0	3	2	10
21	1	2	1	0	0	0	0	04
22	1	1	1	1	0	0	1	06
23	1	1	1	1	2	2	2	12
24	1	1	3	4	3	1	1	14
25	2	2	1	0	0	1	1	07
26	0	1	1	1	0	1	0	04
27	0	0	2	2	1	2	1	10
28	3	3	4	2	2	1	2	19
29	2	3	3	2	3	2	3	19
30	1	2	2	0	0	0	0	06
31	1	1	0	0	0	0	0	02

T O O L A N G I

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	Y	°	Y
July	22537	10 31.9E	-56367

PRINCIPAL MAGNETIC STORMS - JULY 1965

Nil

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JULY 1965

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	<u>Sense of Movement</u>		
			<u>H</u>	<u>D</u>	<u>Z</u>
03	20 24	bp C	-	+	+
05	16 50	pi2 C			
06	04 56	si B			
08	17 18	bp B	+	+	+
10	08 59	bp B	+	-	+
12	16 03	si B			
12	22 18	pc5 B			
14	15 43	bp C	+		
14	16 32	bp B	+	+	
14	17 18	bp B	+	+	
15	11 36	bp B	+	-	+
17	10 43	bp C		-	
18	15 34	si A			
19	15 27	bps B	+	+	+
20	15 50	bp C	+	+	+
20	16 28	bp B	+	+	+
24	10 05	bp B	+	-	+
24	13 39	bp B	+	+	+

G N A N G A R A

MAGNETIC K-INDICES - JULY 1965

Range for lower limit of K=9 is 350 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	2	2	2	2	2	2	2	2	16
2	1	1	1	1	2	1	1	1	09
3	1	1	1	1	2	1	1	1	09
4	1	1	1	0	0	0	0	0	03
5	0	1	1	1	0	1	1	0	05
6	1	4	3	4	4	3	2	1	22
7	1	2	2	2	0	1	2	2	12
8	3	3	3	2	2	4	4	3	24
9	3	3	2	2	1	2	2	2	17
10	3	4	3	4	4	2	1	0	21
11	0	1	0	0	0	1	0	0	02
12	0	1	0	0	0	2	2	2	07
13	1	1	1	2	2	1	2	0	10
14	1	1	0	0	0	2	1	1	06
15	1	2	3	3	2	2	2	2	17
16	0	1	1	1	0	1	0	0	04
17	0	0	0	1	1	0	0	0	02
18	0	1	1	0	0	3	3	1	09
19	2	2	4	3	3	4	2	2	22
20	1	1	1	1	0	3	3	2	12
21	2	1	1	0	0	0	0	0	04
22	1	1	0	1	0	0	1	1	05
23	1	1	1	1	2	2	3	3	14
24	1	2	2	3	3	1	2	1	15
25	1	1	1	1	0	1	1	0	06
26	1	1	0	1	0	1	0	1	05
27	1	1	2	1	1	2	2	1	11
28	3	4	5	2	3	1	3	2	23
29	2	3	3	3	4	3	4	1	23
30	1	1	0	0	0	0	0	2	04
31	1	1	0	0	0	0	0	1	03

G N A N G A R A

PRELIMINARY MONTHLY MEAN VALUES

Based on 5 selected quiet days

1965	H Y	D ° ' "	Z Y
July	23902	2 51.5W	-53501

PRINCIPAL MAGNETIC STORMS - JULY 1965

date	storm time		sudden commencements			act- iv- ity	max. activity 0 to 9			Ranges			
	begin	end	type	amplitudes			day	3-hr per.	K	D	H	Z	
	h m	d h		D	H								Z
27	0620	2920	sc	-2Y	+2	+2	m	28	3	5	10	87	64

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JULY 1965

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	Sense of Movement		
			<u>H</u>	<u>D</u>	<u>Z</u>
03	20 02	pi2 B			
07	15 10	pi2 B			
11	16 20	pi2 B			
14	16 31	bps B	+	-	-
14	17 18	bps B	+	-	-
18	15 34	ssc B	+	+	+
19	15 27	bp B	+	-	-
20	16 53	pi2 B			
27	06 20	ssc B	+	-	+

P O R T M O R E S B Y

MAGNETIC K-INDICES - JULY 1965

Range for lower limit of K=9 is 300 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	3	3	3	4	3	2	2	2	22
2	1	1	1	3	2	1	1	2	12
3	2	1	1	1	1	0	2	2	10
4	1	1	1	0	1	1	1	1+	07+
5	1	1	1	1	0	0	1	2	07
6	1	4	4	5	4	4	2	1	25
7	3	3	1	2	1	1	1	2	14
8	4	4	2	2	3	4	4	4	27
9	4	3	2	2	1	3	2	3	20
10	3	4	3	3	2	1	1	1	18
11	1	1	0	0	1	2	0	0	05
12	1	1	2	0	0	3	3	2	12
13	2+	1	1	2	2	1	2	1	12+
14	2	1	0	0	1	2	1	1+	08+
15	1	2	3	2	2	1	1	1	15
16	1	1	1	0	1	0	0	1	05
17	0	0	0	1	0	0	2	0	03
18	0	0	0	0	0	4	2	2	08
19	3	3	4	3	3	4	2	2	24
20	1+	2	2	2	1	2	2	1	13+
21	2	1	2	1	0	1	2	1	10
22	2	2	2	2	1	1	2	2	14
23	2	2	2	2	3	2	3	2	19
24	2	2	2	4	3	1	1	0	15
25	1	2	2	1	1	1	1	1	10
26	1	1	2	2	1	2	2	2	13
27	2	2	3	2	2	2	1	1	15
28	2	4	4	2	2	1	2	3	21
29	3	4	3	2	3	2	2	2	21
30	2	1	1	-	-	0	0	0	--
31	0	0	0	0	0	0	0	0	00



P O R T M O R E S B Y

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	Y	°	Y
July	36333	06 08.5E	-22989

PRINCIPAL MAGNETIC STORMS - JULY 1965

date	storm time		sudden commencements			act-iv-ity	max. activity 0 to 9			Ranges			
	begin	end	type	amplitudes			day	3-hr per.	K	D	H	Z	
	h m	d h		D	H								Z
06	0449	0705	ssc	-	14	10	m	6	4	5	36	102	36

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JULY 1965

Day	Time		Type	Sense of Movement		
	h	m		H	D	Z
06	04	49	ssc C	+		+
10	09	10	bp B	+	+	+
10	11	50	bp B	+	+	+
12	16	01	ssc B	+	+	+
14	15	42	bp B	+	+	+
14	16	31	bp B	+	+	+
14	17	18	bp B	+	+	+
18	15	34	ssc A	+	+	+
19	01	58	si A	-	-	-
19	15	24	bp B	+	+	+
20	15	54	bp B	+	+	+
20	16	29	bp B	+	+	+
27	06	20	ssc B	+		+