

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

GEOPHYSICAL OBSERVATORY REPORT

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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

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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,
Geology and Geophysics,
203 Collins Street,
MELBOURNE, C.1.,
A U S T R A L I A.

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 γ/mm
		Z 5.2 γ/mm

Recording speed	:	20 mm/hour
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Askania (Eschenhagen type)H variometer with visual recorder

Sensitivity	:	3 γ/mm
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Recording speed	:	20 mm/hour
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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 γ/mm
		Z 20.6 γ/mm

Recording speed	:	15 mm/hour
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Rapid-run instrument: Sensitivity	:	D 1.0 min/mm
		H 5.4 γ/mm
		Z 9 γ/mm

Recording speed	:	180 mm/hour
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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
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Bar fluxmeter D magnetograph

Recording speed :	5 mm/minute
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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	3.2 Y/mm

Recording speed :	15mm/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
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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 γ/mm
		Z 4.4 γ/mm

Recording speed	:	15 mm/hour
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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 25.0 γ/mm
		Z 20.7 γ/mm

Recording speed	:	20 mm/hour
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Rapid-run instrument: Sensitivity	:	D 1.1 min/mm
		H 5.1 γ/mm
		Z 7 γ/mm

Recording speed	:	240 mm/hour
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M A W S O N

MAGNETIC K-INDICES - JUNE 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	0	1	1	2	3	5	16
2	3	2	4	3	1	2	4	4	23
3	1	1	2	2	1	7	6	6	26
4	1	2	2	4	4	5	4	6	28
5	5	4	3	2	2	1	1	1	19
6	2	3	2	2	2	2	5	4	22
7	4	4	2	1	2	0	0	2	15
8	3	1	3	3	2	1	5	7	25
9	5	6	4	4	3	4	6	5	37
10	4	3	2	1	0	0	0	1	11
11	0	1	2	1	1	2	4	4	15
12	3	3	1	2	2	1	2	3	17
13	2	1	0	0	0	0	0	0	03
14	1	3	2	1	2	1	5	5	20
15	2	3	3	4	3	5	6	5	31
16	6	7	5	4	4	5	8	7	46
17	7	4	5	5	4	5	2	7	39
18	6	4	3	3	2	2	4	5	29
19	5	3	2	2	1	0	0	3	16
20	2	1	1	0	1	0	3	3	11
21	2	2	0	0	0	1	1	3	09
22	4	3	1	2	2	2	2	5	21
23	3	1	1	2	0	0	0	2	09
24	3	1	0	0	0	1	2	1	08
25	1	0	0	0	0	3	4	3	11
26	2	3	3	2	2	2	5	6	25
27	6	4	3	3	2	1	2	3	24
28	3	1	1	1	2	1	3	3	15
29	3	3	4	4	4	3	4	6	31
30	5	4	4	4	3	3	6	8	37

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	Y	°	Y
June	18347	61 12.6W	-48420

W I L K E S

MAGNETIC K-INDICES - JUNE 1965

Range for lower limit of K=9 is 2500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	0	1	0	0	0	2	1	2	06
2	0	1	1	0	1	1	1	1	06
3	0	1	1	0	0	2	2	2	08
4	1	2	3	3	2	5	5	2	23
5	2	2	2	0	0	0	1	0	07
6	2	2	1	2	2	0	2	0	11
7	1	1	0	0	0	1	0	0	03
8	1	1	2	2	2	0	2	3	13
9	2	3	1	0	2	2	2	1	13
10	1	1	0	0	0	0	0	0	02
11	0	2	1	0	0	0	1	0	04
12	0	2	1	0	0	0	0	0	03
13	0	0	0	0	0	1	0	0	01
14	0	1	1	1	0	0	3	2	08
15	1	1	1	2	2	2	3	3	15
16	4	3	3	2	2	3	5	5	27
17	3	2	1	1	3	3	1	3	17
18	4	2	1	0	0	1	1	1	10
19	1	2	1	0	0	0	0	0	04
20	0	0	0	0	0	0	1	0	01
21	0	1	0	0	0	1	0	0	02
22	0	1	1	1	0	0	0	0	03
23	1	1	1	0	0	0	0	0	03
24	0	1	0	0	0	0	0	0	01
25	0	1	1	0	0	3	1	2	08
26	2	2	1	1	0	1	2	1	10
27	2	1	1	1	1	0	0	0	06
28	1	1	1	0	1	0	1	0	05
29	2	2	2	1	1	3	3	1	15
30	2	2	2	3	2	1	2	3	17

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	Y	° ' "	Y
June	9219	86 14.8W	-64725

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

MAGNETIC K-INDICES - JUNE 1965

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	0	0	1	2	0	1	1	0	05
2	0	0	0	0	2	0	0	0	02
3	0	0	0	0	1	1	2	1	05
4	0	0	1	6	4	4	2	1	18
5	1	2	1	0	0	0	0	0	04
6	0	0	0	4	2	0	0	0	06
7	0	0	0	0	1	0	0	0	01
8	0	0	0	3	4	1	1	1	10
9	2	2	2	4	6	6	1	0	23
10	0	0	0	0	0	0	0	0	00
11	0	0	0	0	2	0	0	0	02
12	0	0	0	0	0	0	0	0	00
13	0	0	0	1	0	0	0	0	01
14	0	0	0	1	1	0	2	2	06
15	0	0	1	3	6	5	5	2	22
16	4	4	7	7	9	8	7	7	53
17	4	5	5	6	6	6	1	4	37
18	4	2	2	2	0	0	0	1	11
19	1	0	0	0	0	0	0	0	01
20	0	0	0	0	0	0	0	0	00
21	0	0	0	0	0	0	0	0	00
22	0	0	0	4	2	0	0	0	06
23	0	0	0	0	0	0	0	0	00
24	0	0	0	0	0	0	0	0	00
25	0	1	2	3	0	0	1	0	07
26	0	0	0	0	0	4	2	1	07
27	1	1	2	3	3	0	0	0	10
28	0	0	0	2	0	0	0	0	02
29	0	0	1	5	2+	1	1	0	10+
30	0+	1	5	6	5	1	1	2	21+

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H γ	D °	Z γ
June	13153	26 27.6E	-64219

T O O L A N G I

MAGNETIC K-INDICES - JUNE 1965

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	0	1	1	1	0	2	1	2	08
2	0	1	0	0	2	2	2	1	08
3	0	0	1	0	1	2	2	2	08
4	0	1	3	4	3	4	2	2	19
5	2	3	1	0	0	0	0	0	06
6	0	1	1	3	2	1	1	0	09
7	0	1	0	0	1	1	0	0	03
8	0	1	3	3	3	1	3	3	17
9	2	3	3	2	3	3	2	2	20
10	1	1	0	1	0	0	0	0	03
11	0	1	0	1	1	1	1	1	06
12	0	1	1	0	1	0	0	0	03
13	0	0	0	0	0	1	0	0	01
14	0	1	1	1	1	1	3	2	10
15	1	1	2	4	3	4	4	3	22
16	5	5	5	5	5	5	5	4	39
17	4	3	4	3	4	4	1	4	27
18	4	3	2	2	0	0	2	1	14
19	0	1	0	0	0	0	0	0	01
20	0	0	0	0	0	0	0	0	00
21	0	0	0	0	0	0	0	0	00
22	1	1	1	2	1	1	0	0	07
23	1	1	0	0	0	1	0	0	03
24	0	0	0	0	0	1	0	0	01
25	0	1	0	1	1	3	2	1	09
26	1	2	2	1	0	1	1	1	09
27	3	2	3	3	3	0	0	0	14
28	1	1	1	1	1	0	0	0	05
29	2	2	3	3	1	1	1	1	14
30	1	2	3	4	3	3	2	3	21

T O O L A N G I

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H Y	D °	Z Y
June	22537	10 31.5E	-56368

PRINCIPAL MAGNETIC STORMS - JUNE 1965

date	storm time		sudden commencements			act-iv-ity	max. activity 0 to 9			Ranges		
			type	amplitudes			day	3-hr per.	K	D	H	Z
	begin	end		D	H							
	h m	d h			Y	Y					Y	Y
15	1101	1811	sc				m	16	1,2, 5	29	167	62
									3,4, 5,6, 7			

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JUNE 1965

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	Sense of Movement		
			H	D	Z
01	15 26	bp C	+	-	+
02	13 25	bp C	+	-	+
03	11 47	pi2 C			
06	10 42	bp B	+	-	+
07	12 44	pi2 B			
08	06 24	si C			
08	09 45	bp B	+	-	+
08	13 05	bps B	+	-	+
11	12 32	pi2 C			
12	13 35	pi2 B			
13	09 30	pi2 B			
15	11 01	ssc B	+	-	+
19	03 35	pc4 B			
20	06 40	pc4 B			
21	15 05	pi2 B			
22	10 37	bp C	+		+
25	12 00	pc4 C			

G N A N G A R AMAGNETIC K-INDICES - JUNE 1965

Range for lower limit of K=9 is 350 gammas

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

G N A N G A R A

PRELIMINARY MONTHLY MEAN VALUES

Based on 5 selected quiet days

1965	H	D	Z
	γ	°	γ
June	23904	2 51.7W	-53507

PRINCIPAL MAGNETIC STORMS - JUNE 1965

date	storm time		sudden			act- iv- ity	max. activity			Ranges				
			commencements				0 to 9							
	begin	end	type	amplitudes			day	3-hr per.	K					
				D	H					Z				
	h	m	d	h		Y	Y				D	H	Z	
15	11	01	18	01	sc	+1	+6	+2	ms	16	5,6,6	6	24	123 113
											7			

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JUNE 1965

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	Sense of Movement		
			H	D	Z
04	10 13	bp B	+	-	-
08	13 04	bp B	+	-	-
14	19 58	bp B	+	+	+
15	11 01	ssc B	+	+	+
21	16 47	pi2 B			
24	15 56	si B	+	+	+

P O R T M O R E S B Y

MAGNETIC K-INDICES - JUNE 1965

Range for lower limit of K=9 is 300 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	1	1	0	1	3	3	2	1	12
2	2	2	1	1	1	3	2	1+	13+
3	1	0	0	0	2	2	3	2	10
4	1	3	2	4	3	3	1	2	19
5	2	2	0	1	1	0	0	1	07
6	0	1	1	2	3	0	1	1	09
7	1	1	0	0	1	1	1	1	06
8	1	1	2	2	3	1	3	3	16
9	2	5	3	2	3	3	2	2	22
10	2+	2	1	2	1	0	0	0	08+
11	1	1	2	2	2	2	2	2	14
12	1	2	1	-	-	-	-	-	--
13	2	1	1	2	2	-	-	-	--
14	1	1	2	2	2	3	3	2	16
15	1	2	2	4	4	3	4	3	23
16	5	5	5	3	5	6	5	5	39
17	-	-	3+	3+	4+	4+	3+	4+	--
18	3+	3	2	2	0	1	3	3	17+
19	2	1	1	1	0	0	0	1	06
20	2	2	1	0	0	1	1	0	07
21	1	1	0	0	0	1	1	1	05
22	1	2	1+	-	-	-	-	1+	--
23	1	1	1	1	1	1	0	0+	06+
24	1	1	2	0	2	1	2	1+	10+
25	1+	2	1	2	3	3	2	1	15+
26	2	2	2	2	1	2	2	2	15
27	-	-	-	-	-	-	-	-	--
28	1	1	2	2	2	1	1	2	12
29	3	3	4	3	3	3	1	2	22
30	1	3	3	4	4	4	2	2+	23+

P O R T M O R E S B Y

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H γ	D ° ' "	Z γ
June	36329	06 08.8E	-22988

PRINCIPAL MAGNETIC STORMS - JUNE 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	
				D	H								Z
	h m	d h		γ	γ						γ	γ	
15	1100	17..	sc	3	22	16	ms	16	6	6	68	138	-

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JUNE 1965

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	Sense of Movement		
			H	D	Z
01	15 58	bp B	+	+	+
03	17 45	bp B	+	+	+
08	06 22	ssc B	+	-	+
08	13 05	bp B	+	-	+
09	04 40	bp A	+	+	+
15	11 00	ssc B	+	-	+
24	14 55	ssc B	+	+	+
25	15 40	bp B	+		+