

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,
P.O. Box 378,
CANBERRA CITY, A.C.T.

CONTRIBUTING OBSERVATORIES:

GNANGARA MAGNETIC OBSERVATORY

P.M. McGregor, Observer in Charge

Geographic Latitude $31^{\circ}47'S$ Longitude $115^{\circ}57'E$
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 5.3 γ /mm

Recording speed : 20 mm/hour

Askania (Eschenhagen type) H variometer with visual recorder

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

MACQUARIE ISLAND MAGNETIC OBSERVATORY

R.G. Sutton, Observer in Charge

Geographic Latitude $54^{\circ}30'S$ Longitude $158^{\circ}57'E$
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 24.5 γ /mm
Z 20.6 γ /mm

Recording speed : 15 mm/hour

Rapid-run instrument: Sensitivity : D 1.0 min/mm

H 5.4 γ /mm

Z 9.0 γ /mm

Recording speed : 180 mm/hour

CONTRIBUTING OBSERVATORIES

MAWSON MAGNETIC OBSERVATORY

J. Haigh, Observer in Charge

Geographic Latitude $67^{\circ}36'S$ Longitude $62^{\circ}53'E$
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 γ /mm
Z 10.0 γ /mm

Recording speed : 15 mm/hour
Low sensitivity : D 2.4 min/mm
H 51 γ /mm
Z 50 γ /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 $9^{\circ}24'S$ Longitude $147^{\circ}09'E$
Geomagnetic Latitude -18.7° Longitude 218.0°

Instruments

Askania declinometer No. 580333
La Cour QHMs Nos. 187, 188, 189
La Cour D, H & Z recording variometers

Standard instrument : Sensitivity : D 0.44 min/mm
H 2.8 γ /mm
Z 3.3 γ /mm

Rapid-run instrument: Sensitivity : 15 mm/hour
D 0.05 min/mm
H 1.2 γ /mm
Z 0.3 γ /mm

Recording speed : 180 mm/hour

CONTRIBUTING OBSERVATORIES

TOOLANGI MAGNETIC OBSERVATORY

C.A. van der Waal, Observer in Charge

Geographic Latitude $37^{\circ}32'S$ Longitude $145^{\circ}28'E$
 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

WILKES MAGNETIC OBSERVATORY

P.J. Browne-Cooper, Observer in Charge

Geographic Latitude $66^{\circ}15'S$ Longitude $110^{\circ}31'E$
 Geomagnetic Latitude -77.2° Longitude 179.2°

Instruments

C.I.W. field magnetometer and theodolite earth-inductorNo28

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 γ /mm
Z 20.8 γ /mm

Recording speed : 20 mm/hour

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

Recording speed : 240 mm/hour

M A W S O N

MAGNETIC K-INDICES - OCTOBER 1965

Range for lower limit of K-9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>							<u>K-Sum</u>
1	1	0	0	0	0	0	3	04
2	6	6	5	2	3	4	5	38
3	2	3	2	1	1	0	1	14
4	3	2	0	0	0	0	0	06
5	3	3	2	2	3	2	1	19
6	3	2	1	0	0	0	0	07
7	1	1	1	2	2	3	2	15
8	7	4	6	1	2	1	6	33
9	4	4	2	2	2	0	2	19
10	2	3	2	1	1	0	5	17
11	2	2	1	1	2	1	3	16
12	5	3	3	2	2	2	5	24
13	4	3	2	3	3	3	6	26
14	3	4	2	2	3	2	1	21
15	4	2	1	2	1	0	1	12
16	2	2	1	0	1	1	1	10
17	2	1	0	1	1	0	0	07
18	5	2	3	2	2	1	2	19
19	1	3	1	3	3	1	4	19
20	2	2	1	1	0	0	5	15
21	3	3	1	2	1	1	1	13
22	3	2	3	3	1	5	5	27
23	3	6	6	3	3	5	7	39
24	5	6	3	2	3	4	6	33
25	4	5	3	3	4	4	3	31
26	5	3	2	3	1	1	4	23
27	3	2	2	2	3	2	2	21
28	5	3	3	5+	4+	2+	4+	31+
29	4	2	2	0	0	2	3	19
30	3	4	5	3	2	2	5	28
31	5	4	3	2	3	4	6	33

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	γ	$^{\circ}$	γ
October	18360	61 16.1W	-48316

W I L K E S

MAGNETIC K-INDICES - OCTOBER 1965

Range for lower limit of K=9 is 2500 gammas

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

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	γ	$^{\circ}$ ' "	γ
October	9237	86 17.4W	-64707

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

MAGNETIC K-INDICES - OCTOBER 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	0	0	0	0	0	1	01
2	2	4	3	4	5	6	1	3	28
3	1	1	2	2	0	0	0	0	06
4	0	1	0	0	0	0	0	0	01
5	1	1	1	0	5	1	0	0	09
6	0	0	0	0	0	0	0	0	00
7	0	0	0	1	2	1	0	2	06
8	4	3	3	0	1	1	2	1	15
9	1	1	1	0	2	0	0	0	05
10	0	1	1	0	0	0	0	0	02
11	0	0	0	1	0	0	0	1	02
12	1	2	0	3	2	0	0	0	08
13	1	3	1	3	1	0	2	0	11
14	2	1	0	4	2	0	0	0	09
15	0	0	0	0	0	0	0	0	00
16	0	0	0	0	0	0	0	0	00
17	0	0	0	0	0	0	0	0	00
18	2	2	3	5	2	0	0	0	14
19	0	0	0	4	3	0	0	0	07
20	0	0	0	1	0	0	0	0	01
21	0	0	0	0	0	0	0	0	00
22	1	0	4	4	0	5	5	1	20
23	1	4	5	5	7	2	3	2	29
24	3	3	2	3	4	5	1	0	21
25	2	3	2	6	5	4	1	1	24
26	1	1	0	1	0	0	0	0	03
27	1	0	1	1	4	2	0	1	10
28	3	1	0	7	7	0	1	1	20
29	1	0	0	0	0	0	0	1	02
30	1	4	3	3	0	0	0	1	12
31	2	2	2	0	0	3	1	1	11

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	γ	$^{\circ}$	γ
October	13148	26 31.4E	-64203

T O O L A N G I

MAGNETIC K-INDICES - OCTOBER 1965

Range for lower limit of K=9 is 500 gammas

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

T O O L A N G I

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H γ	D o	Z γ
October	22533	10 32.4E	-56373

PRINCIPAL MAGNETIC STORMS - OCTOBER 1965

date	storm time		sudden commencements			act-iv-ity	max. activity			ranges		
	begin	end	type	amplitudes			0 to 9					
							3-hr	K				
day	per.		D	H	Z							
1965	h	m	d	h	γ	γ				γ	γ	
07	09	00	08	16	-2.3*	+14	m	8	1	5	12 85 22	

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - OCTOBER 1965

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	Sense of Movement		
			H	D	Z
2	04 13	si B			
	14 48	bp B	+	+	+
5	13 10	bp B	+	-	+
7	09 00	ssc* B	+	-*	+
8	02 00	si A			
9	12 20	bp B	+	-	+
10	12 50	pi2 B			
12	11 26	bp B	+	-	+
14	10 30	bp B			
16	11 40	pi2 B			
19	10 45	pi2 B			
	11 45	bp B	+	-	+
22	01 25	ssc C	+	-	+
25	09 11	pi2 B			
	10 07	bps B	+	-	+
27	13 45	bp B	+	+	+
28	11 01	pi2 A			
	11 36	bps A	+	-	+

G N A N G A R A

MAGNETIC K-INDICES - OCTOBER 1965

Range for lower limit of K=9 is 350 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	1	0	1	0	0	1	0	1	04
2	3	3	3	3	3	4	2	5	26
3	1	1	1	1	0	1	1	1	07
4	0	1	0	0	0	0	0	0	01
5	3	2	2	1	4	2	1	1	16
6	0	1	0	1	0	0	0	1	03
7	1	0	1	3	1	2	2	2	12
8	5	3	3	2	2	1	2	2	20
9	2	1	0	0	1	0	1	1	06
10	1	1	1	0	1	1	1	1	07
11	1	1	1	1	1	1	2	2	10
12	2	1	1	2	2	1	2	1	12
13	2	1	1	1	1	2	4	2	14
14	1	1	1	2	2	1	1	1	10
15	1	0	0	1	0	0	1	0	03
16	0	1	1	0	1	0	1	1	05
17	-	-	-	-	-	-	-	-	--
18	2	1	2	1	2	0	1	1	10
19	-	-	-	-	-	-	-	-	--
20	2	1	1	1	1	1	2	2	11
21	0	1	1	1	0	0	0	1	04
22	3	2	3	3	2	4	4	3	24
23	2	3	4	4	4	3	4	3	27
24	3	2	2	1	3	3	3	1	18
25	2	2	2	3	4	2	2	2	19
26	2 ⁺	1 ⁺	1	1	1	1	1	2	10 ⁺
27	1	2	2	2	3	2	1	3	16
28	3	1	1	5	5	1	3	2	21
29	1	1	1	0	0	2	2	3	10
30	1	2	3	2	1	2	3	2	16
31	1	2	2	0	1	4	3	2	15

G N A N G A R A

PRELIMINARY MONTHLY MEAN VALUES

Based on 5 selected quiet days

1965	H γ	D o	Z γ
October	23905	2 51.9W	-53492

PRINCIPAL MAGNETIC STORMS - OCTOBER 1965

date	storm time				sudden commencements				act-iv-ity	max. activity			ranges				
	begin		end		type	amplitudes				0 to 9		day	3-hr		K	D H Z	
						D	H	Z		per.							
1965	h	m	d	h		γ	+	γ			day	per.	K		D	H	Z
07	07	08	08	10	sc	+	+2	+2	ms	8	1	5	12	2182			

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - OCTOBER 1965

Day	Time h m	Type	Sense of Movement		
			H	D	Z
2	04 13	ssc* B	-	+	+
2	14 48	bp A	+	+	+
5	02 39	ssc B	+	+	+
7	07 08	ssc B	+	+	+
14	13 06	pi2 B			
20	14 25	pi2 B			
22	01 25	ssc B	+	-	-
27	13 45	bp B	+	+	+
28	11 20	b A	+	-	-
29	16 50	pi2 B			

NOTE: No Record 17th 00 - 24h
 19th 00 - 24h
 28th 00 - 24h
 29th 00 - 10 35 h

P O R T M O R E S B Y

MAGNETIC K-INDICES - OCTOBER 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	1	1	1	1	1	2	09
2	3	3	3	3	3	3	2	2	22
3	1	1	3	2	1	1	1	1	11
4	1+	-	1	1	0	0	0	0	--
5	3	2	3	2	3	2	2	2	19
6	1	1	1	1	0	0	0	1+	05+
7	1	1	2	4	2	2	2	3	17
8	5	4	4	2	3	2	3	3	26
9	1	1	2	1	2	0	1	2	10
10	1	1	1	1	1	0	0	1	06
11	2	1	0	1	1	2	1	1	09
12	1	1	1	2	2	1	1	1	10
13	2	1	1	2	2	2	2	1+	13+
14	1	2	2	2	3	2	1	2	15
15	1	1	1	1	1	1	1	1	08
16	1	1	1	1	1	1	1	2	09
17	0	0	0	2	2	0	1	2	07
18	3	2	2	2	2	2	1	1	15
19	1	1	2	3	2	2	1	1	13
20	1	1	1	1	1	0	1	1	07
21	1	0	1	0+	0+	0	1	1+	04+
22	3+	2+	2	3	2	4	4	2	22
23	2	3	4	4	4	3	3	2	25
24	2	2	2	2	3	3	2	1+	17+
25	-	-	-	-	-	-	-	-	--
26	-	-	1	1	0	1	1	1	--
27	1	1	2	1	3	2	1	2+	13+
28	3	2	2	5	4	2	2	1+	21+
29	1	1	1	1	0	2	2	2	10
30	1	2	3	2	1	1	1	1	12
31	2	2	2	1	2	2	2	1	14

P O R T M O R E S B Y

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H Y		D O		Z Y
October	36332		06	08.6W	-23000

PRINCIPAL MAGNETIC STORMS - OCTOBER 1965

date	storm time		sudden commencements				act-iv-ity	max. activity			Ranges			
	begin	end	type	amplitudes				0 to 9		K				
				D	H	Z		day	3-hr per.		D	H	Z	
1965	h	m	d	h										
08	02	00	08	16	ssc	0.5	40	-33	m	08	1	5	2.0	92 69

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - OCTOBER 1965

Day	Time h m	Type	Sense of Movement		
			H	D	Z
2	14 50	bp B	+	+	+
5	02 43	ssc B	+	+	+
7	09 00	ssc B	+	+	+
8	02 00	s1 B	+	+	+
8	02 38	ssc B	+	-	+
12	11 26	bp B	+	-	+
14	10 31	bp C	+	-	+
19	11 45	bp B	+		+
22	01 27	ssc B	+	-	+
22	18 07	s1 B	-	+	-
24	14 30	bp B	+		+
25	09 07	bp B			+
27	13 45	bp B	+	+	+
28	11 20	bp B	+		+