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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C O N T E N T S

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 2.6 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°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 25 γ/mm
			Z 21 γ/mm
	Recording speed	:	15 mm/hour
Rapid-run instrument:	Sensitivity	:	D 1.0 min/mm
			H 5.4 γ/mm
			Z 9 γ/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 9.4 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°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 2.9 γ/mm
			Z 3.2 γ/mm
	Recording speed	:	15 mm/hour
Rapid-run instrument:	Sensitivity	:	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°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 4.6 γ/mm
		Z 4.4 γ/mm
Recording speed	:	15 mm/hour

WILKES MAGNETIC OBSERVATORY

G.R. Small, 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 γ/mm
			Z 21 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 - FEBRUARY 1965

Range for lower limit of K=9 is 1500 gammas

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

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	γ	° '	γ
February	18351	61 07.9W	-48384

W I L K E S

MAGNETIC K-INDICES - FEBRUARY 1965

Range for lower limit of K=9 is 2500 gammas

Day	K-Indices								K-Sum
1	3	4	3	2	0	0	0	1	13
2	2	2	3	1	0	1	1	1	11
3	3	3	3	2	1	1	1	2	16
4	2	4	4	3	2	2	2	2	21
5	2	3	2	1	0	1	2	1	12
6	3	3	3	2	2	4	2	3	22
7	3	4	3	2	3	2	1	1	19
8	2	3	3	2	1	1	3	4	19
9	3	4	4	3	2	2	2	1	21
10	2	6	5	3	2	1	1	2	22
11	2	4	5	2	2	2	2	2	21
12	3	4	3	2	1	0	0	0	13
13	2	3	3	3	1	0	1	2	15
14	5	5	4	3	-	-	-	-	--
15	-	4	4	2	2	3	1	2	--
16	2	4	3	2	1	0	0	2	14
17	2	3	1	1	2	0	0	0	09
18	3	2	2	0	1	1	0	2	11
19	3	4	2	1	0	0	0	2	12
20	2	3	3	1	0	2	1	2	14
21	4	5	4	2	2	2	1	1	21
22	2	3	2	1	1	0	0	1	10
23	2	4	4	3	2	3	2	2	22
24	3	3	4	3	2	0	1	3	19
25	3	4	4	3	1	1	1	2	19
26	3	3	2	2	2	2	1	2	17
27	3	3	4	3	2	3	0	2	20
28	2	2	2	2	1	2	0	0	11

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H	D	Z
	γ	° '	γ
February	9234	86 03.4W	-64725

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

MAGNETIC K-INDICES - FEBRUARY 1965

Range for lower limit of K=9 is 1500 gammas

Day	K-Indices								K-Sum
1	0	1	0	0	0	0	0	0	01
2	0	0	0	0	0	0	0	2	02
3	0	0	1	0	0	0	0	2	03
4	0	3	2	2	2	4	1	0	14
5	0	1	1	0	0	1	1	1	05
6	0	0	1	0	2	7	2	2	14
7	2	5	6	6	5	6	4	1	35
8	1	1	2	0	1	1	3	4	13
9	2	2	1	0	1	4	3	1	14
10	1	2	2	5	4	3	0	0	17
11	0	2	3	0	2	1	2	0	10
12	0	1	1	2	0	0	0	0	04
13	0	0	1	1	0	0	0	1	03
14	1	2	3	6	3	0	0	0	15
15	1	1	0	0	6	7	0	1	16
16	1	1	1	2	2	3	0	0	10
17	0	0	0	1	3	0	0	0	04
18	0	0	0	0	1	0	0	1	02
19	1	0	0	1	2	1	0	0	05
20	1	0	0	0	0	1	1	1	04
21	2	4	2	4	4	4	1	0	21
22	0	0	0	0	1	0	0	0	01
23	1	0	0	3	5	5	6	2	22
24	1	1	1	3	2	1	0	1	10
25	3	1	3	2	0	1	0	1	11
26	1	2	3	4	2	2	0	0	14
27	1	0	0	3	5	5	0	1	15
28	1	0	0	0	3	3	0	0	07

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H γ	D ° '	Z γ
February	13162	26 24.8E	-64224

T O O L A N G I

MAGNETIC K-INDICES - FEBRUARY 1965

Range for lower limit of K=9 is 500 gammas

Day	K-Indices								K-Sum
1	1	1	1	1	0	0	0	1	05
2	1	1	1	0	0	0	1	2	06
3	1	1	2	2	2	0	0	3	11
4	1	3	3	2	1	3	2	1	16
5	0	1	0	1	1	2	2	2	09
6	2	1	2	1	3	4	3	3	19
7	3	3	4	3	3	3	2	1	22
8	2	2	2	2	1	2	3	3	17
9	3	3	2	3	3	3	2	2	21
10	2	3	2	3	3	2	0	1	16
11	1	2	3	0	2	1	1	1	11
12	1	2	0	2	2	0	0	0	07
13	1	0	1	1	0	1	2	2	08
14	2	2	3	4	3	1	2	2	19
15	2	2	2	1	3	4	2	2	18
16	1	1	1	2	2	0	1	1	09
17	1	0	0	1	3	0	1	2	08
18	0	0	0	0	1	1	0	2	04
19	1	0	1	1	1	1	1	1	07
20	2	1	1	1	1	2	1	2	11
21	2	3	2	3	3	1	2	1	17
22	2	1	1	0	2	1	1	2	10
23	1	1	1	3	3	4	4	3	20
24	2	2	2	3	2	1	1	1	14
25	3	1	3	2	2	1	1	2	15
26	1	2	2	2	2	2	2	3	16
27	1	1	1	3	3	3	1	3	16
28	2	1	1	1	3	3	2	1	14

T O O L A N G I

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1965	H γ	D ° '	Z γ
February	22553	10 30.7E	-56372

PRINCIPAL MAGNETIC STORMS - FEBRUARY 1965

NIL

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - FEBRUARY 1965

Day	Time h m	Type		Sense of Movement H	D	Z
04	16 16	bp	B		+	
05	14 09	pi2	B			
05	15 36	pi2	B			
05	17 41	pi2	B			
05	18 46	pi2	B			
06	12 51	ssc	C	+		
06	14 15	si	A	+		+
09	16 40	bp	B	+	+	
12	07 40	pi2	B			
14	11 00	bp	B	+	-	+
17	09 25	pi2	B			
17	12 20	bps	B	+	-	+
20	16 00	bp	C	+		+
21	13 15	bp	C		+	
22	13 37	bp	C	+		
27	13 56	bp	B	+	+	+
28	14 21	bp	B	+	+	+

G N A N G A R A

MAGNETIC K-INDICES - FEBRUARY 1965

Range for lower limit of K=9 is 350 gammas

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

G N A N G A R A

PRELIMINARY MONTHLY MEAN VALUES

Based on 5 selected quiet days

1965	H	D	Z
	γ	° '	γ
February	23911	2 51.7W	-53503

PRINCIPAL MAGNETIC STORMS - FEBRUARY 1965

date	storm time begin	storm time end	sudden commencements type	amplitudes D	H	Z	activity	max.activity 0 to 9 day	3-hr per.	K	Ranges D	H	Z
	h m	d h		'	γ	γ					'	γ	γ
06	14 12	10 15	ssc*	+1	+26	+13	ms	6	6	6	13	112	83

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - FEBRUARY 1965

Day	Time h	m	Type		Sense of Movement H	D	Z
06	14	12	ssc*	A	+	+	+
13	16	58	pi2	B			
14	17	47	bp	B	+	+	+
15	15	19	bp	A	+	+	+
16	13	52	pi2	B			
17	12	16	bp	B	+	-	-
18	12	02	pi2	B			
20	15	16	pi2	B			
21	13	14	bp	B	+	+	+
22	13	30	pi2	B			
27	13	55	bp	B	+		+
28	14	22	pi2	B			

P O R T M O R E S B Y

MAGNETIC K-INDICES - FEBRUARY 1965

Range for lower limit of K=9 is 300 gammas

Day	K-Indices								K-Sum
1	2	2	1	1	0	1	1	1	09
2	2	2	2	1	1	1	1	2	12
3	2	2	2	2	2	2	1	2	15
4	2	2	3	2	2	3	2	1	17
5	2	1	1	2	2	2	2	2	14
6	3	2	2	1	4	4	3	4	23
7	3	5	4	3	4	4	2	2	27
8	2	3	2	4	3	3	4	4	25
9	3	3	2	3	3	3	2	2	21
10	3	3	3	3	2	2	1	2	19
11	1	2	2	2	2	1	3	2	15
12	2	2	2	2	2	1	1	1	13
13	2	1	2	1	2	2	2	2	14
14	2	2	2	3	2	2	2	2	17
15	2	2	2	2	3	4	2	2	19
16	2	2	1	2	2	2	1	1	13
17	1	1	1	2	3	0	1	1	10
18	1	1	0	1	2	1	1	1	08
19	2	2	2	2	1	1	1	1	12
20	3	2	0	1	2	3	2	3	16
21	3	3	3	4	3	2	2	2	22
22	2	0	1	1	2	1	3	2+	12+
23	2	2	2	4	3	4	3	3	23
24	2	2	2	2	2	1	1	2	14
25	3	1	2	2	2	2	1	2	15
26	2	2	2	3	2	2	2	2	17
27	2	2	2	3	3	4	1	2	19
28	2	2	1	1	2	3	2	2	15

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
February	36348	06 08.2E	-22983

PRINCIPAL MAGNETIC STORMS - FEBRUARY 1965

date	storm time begin	storm time end	sudden commencements type	amplitudes D	amplitudes H	amplitudes Z	activity	max.activity 0 to 9 day	3-hr per.	K	Ranges D	Ranges H	Ranges Z
	h m	d h		'	γ	γ					'	γ	γ
06	1416	1015	ssc	+	+	+	m	7	2	5	5.6	143	48

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - FEBRUARY 1965

Day	Time h	Time m	Type		Sense of Movement H	D	Z
06	14	16	ssc	A	+	+	+
10	02	58	ssc	B	+	+	+
13	01	07	b	C	+		+
15	15	25	bp	B	+	+	+
17	12	16	bp	B	+		+
20	15	58	bp	B	+		+
27	14	05	bp	B	+	+	+
28	14	20	bp	B	+		+