

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 - SENATOR The HON. W. H. SPOONER

Secretary - H. G. RAGGATT

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 :-

Chief Geophysicist,
Bureau of Mineral Resources,
Geology & Geophysics,
203 Collins Street,
MELBOURNE, C.1.
A U S T R A L I A.

CONTRIBUTING OBSERVATORIESTOOLANGI MAGNETIC OBSERVATORY J.R. Cleary, Observer-in-Charge

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

Instruments

Ruska magnetometer No.4813
 Schulze earthinductor No.49
 La Cour QHMs Nos.288, 289, 290
 La Cour BMZ No.119
 La Cour D, H & Z recording variometers
 Sensitivity : D 1.16 min/mm
 H 4.6 Y/mm
 Z 4.4 Y/mm
 Recording speed : 15 mm/hour

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

C.I.W. field magnetometer and theodolite earthinductor No.7
 Askania magnetometer No.508810
 Askania earthinductor No.5111081
 La Cour QHMs No.291, 292, 293
 La Cour BMZ No.120
 La Cour D, H & Z recording variometers
 Standard instrument : Sensitivity : D 0.9 min/mm
 H 3.2 Y/mm
 Z 5.4 Y/mm
 Recording speed : 15 mm/hour
 Rapid-run instrument: Sensitivity : D 1.0 min/mm
 H 4.5 Y/mm
 Z 1.5 Y/mm
 Recording speed : 180 mm/hour
 Askania (Eschenhagen type) H variometer with visual recorder
 Sensitivity : 3 Y/mm
 Recording speed : 20 mm/hour

CONTRIBUTING OBSERVATORIESMACQUARIE ISLAND MAGNETIC OBSERVATORY K. VAN ERKELENS
Observer-in-Charge

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

Instruments

La Cour QHMs Nos. 177, 178, 179
 La Cour BMZ No. 64
 Kew pattern magnetometer No. 158
 La Cour D, H & Z recording variometers
 Sensitivity : D 0.9 min/mm
 H 12.5 Y/mm
 Z 14.1 Y/mm
 Recording speed : 15 mm/hour

MAWSON MAGNETIC OBSERVATORY M. Kirton, Observer-in-Charge

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

Instruments

La Cour QMHs Nos. 300, 301, 302
 La Cour BMZ No. 62
 La Cour D, H & Z recording variometers
 Sensitivity : D 0.8 min/mm
 H 9.9 Y/mm
 Z 10.3 Y/mm
 Recording speed : 15 mm/hour
 Bar fluxmeter magnetometer N-S, E-W and vertical components

CONTRIBUTING OBSERVATORIESWILKES MAGNETIC OBSERVATORY R. Underwood, Observer-in-Charge

Geographic Latitude 66°15'S Longitude 110°35'E
 Geomagnetic Latitude -77.2° Longitude 179.2°

Instruments

C.I.W. field magnetometer and theodolite earthinductor No.28
 Ruska D, H & Z recording variometers

Standard instrument : Sensitivity : D 11.3 min/mm
 H 24.2 Y/mm
 Z 24.7 Y/mm

Recording speed : 20 mm/hour

Rapid-run instrument: Sensitivity : D 1.2 min/mm
 H 5.2 Y/mm
 Z 5.7 Y/mm

Recording speed : 240 mm/hour

PORT MORESBY MAGNETIC OBSERVATORY J.A. Brooks,
Observer-in-Charge

Geographic Latitude 9°24.'5S Longitude 147°09.'1E
 Geomagnetic Latitude -18.7° Longitude 218.0°

Instruments

La Cour QHMs Nos.187, 188, 189 .

La Cour BMZ No.68

La Cour D, H & Z recording variometers

Sensitivity : D 0.9 min/mm
 H 6.1 Y/mm
 Z 7.1 Y/mm

Recording speed : 15mm/hour

MAGNETIC K-INDICES FOR JANUARY - TOOLANGI

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Sum</u>				
1	1	2	2	2	2	1	0	0	10
2	1	2	2	1	1	3	2	1	13
3	1	2	2	3	3	2	2	1	16
4	3	3	3	3	4	3	1	1	21
5	3	4	4	4	4	3	2	4	28
6	4	3	3	1	1	3	1	2	18
7	1	2	4	3	1	1	2	1	15
8	2	2	2	2	0	1	2	2	13
9	2	1	2	1	0	1	1	0	08
10	2	2	6	6	4	4	4	4	32
11	3	3	4	4	4	3	2	2	25
12	4	3	3	2	3	3	2	2	22
13	3	2	1	3	1	1	4	3	18
14	5	3	5	6	4	3	4	4	34
15	5	4	4	4	3	4	2	0	26
16	2	2	2	1	2	2	0	4	15
17	2	2	3	2	4	3	2	3	21
18	3	4	6	4	4	2	3	3	29
19	2	2	2	2	2	2	1	2	15
20	2	4	4	5	3	4	3	4	29
21	5	4	4	5	6	4	4	4	36
22	3	3	3	4	3	3	2	2	23
23	3	3	3	3	4	3	3	4	26
24	3	3	3	3	3	2	3	2	22
25	2	2	3	1	3	2	2	2	17
26	2	2	3	2	2	3	1	2	17
27	2	3	2	2	2	2	0	2	15
28	2	1	2	2	2	1	2	2	14
29	3	4	5	3	3	2	0	1	21
30	1	0	0	1	0	1	0	1	04
31	1	2	2	2	2	2	0	1	12

MAGNETIC K-INDICES FOR JANUARY - GNANGARA

Range for lower limit of K=9 is 350 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Sum</u>			
1	2	1	2	1	1	1	1	10
2	1	1	2	1	1	1	1	09
3	1	1	2	1	3	1	1	11
4	3	3	3	3	4	2	1	20
5	3	4	3	4	4	3	2	26
6	4	4	3	2	2	-	-	-
7	2	-	-	3	1	1	2	-
8	2	2	1	1	1	1	1	10
9	1	1	2	2	0	1	1	09
10	1	3	6	6	5	5	4	34
11	4	2	4	4	5	4	2	28
12				No Record				
13				No Record				
14				No Record				
15				No Record				
16				No Record				
17				No Record				
18				No Record				
19				No Record				
20				No Record				
21	-	3	4	5	5	5	3	-
22	3	2	3	3	3	3	3	22
23	3	3	3	2	4	3	3	25
24	4	3	2	3	3	3	3	24
25	2	1	2	2	2	3	2	16
26	3	2	2	2	1	2	1	15
27	3	2	2	1	1	2	1	16
28	2	2	2	2	2	-	-	-
29	3	4	4	3	3	1	1	21
30	1	0	0	1	0	0	0	03
31	1	2	1	2	1	2	0	10

MAGNETIC K-INDICES FOR JANUARY - MACQUARIE ISLAND

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Sum</u>				
1	1	2	1	2	2	0	1	1	10
2	2	2	1	3	3	2	2	1	16
3	2	3	2	3	4	3	1	1	19
4	2	3	3	4	4	3	1	1	21
5	4	5	6	6	6	5	3	3	38
6	3	4	2	1	2	3	2	2	19
7	2	3	3	4	3	2	1	1	19
8	1	2	1	1	2	1	1	2	11
9	2	2	2	1	0	1	1	1	10
10	2	2	5	7	7	6	6	4	39
11	3	4	6	6	-	-	-	-	-
12	3	3	4	2	5	6	3	2	28
13	2	2	3	6	3	3	4	3	26
14	4	4	4	6	4	2	6	6	36
15	7	7	3	5	5	6	2	1	36
16	3	3	1	1	3	1	1	3	16
17	3	4	2	3	3	4	1	2	22
18	2	3	6	7	5	3	3	1	30
19	2	2	2	3	5	3	1	1	19
20	1	-	-	6	5	6	3	2	-
21	4	4	5	7	6	6	7	4	43
22	4	3	3	6	5	4	2	2	29
23	3	4	6	5	5	5	3	3	34
24	3	4	3	4	5	3	3	2	27
25	3	3	3	2	3	3	3	2	22
26	3	3	3	2	2	2	1	1	17
27	2	2	2	3	0	1	0	1	11
28	2	1	3	1	3	1	1	2	14
29	3	3	3	5	4	2	1	1	22
30	2	1	0	0	0	0	0	1	04
31	1	1	1	0	0	2	0	1	06

MAGNETIC K-INDICES FOR JANUARY - WILKES

Range for lower limit of K=9 is 2500 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Sum</u>			
1	4	4	4	2	0	0	0	15
2	2	3	4	2	1	2	1	17
3	3	3	3	3	2	1	2	19
4	3	5	5	5	3	2	1	26
5	4	4	4	4	3	3	3	29
6	5	5	5	5	2	2	2	29
7	4	5	5	5	2	2	2	28
8	4	5	4	3	2	2	2	24
9	4	4	4	4	1	2	2	23
10	4	4	7	5	4	3	4	35
11	5	5	5	4	4	3	3	31
12	4	6	5	3	3	3	3	30
13	3	5	3	3	1	0	4	23
14	5	7	6	4	3	3	4	36
15	5	6	6	4	3	2	1	29
16	4	4	4	2	2	2	1	22
17	4	4	5	3	3	3	3	28
18	4	6	5	3	4	2	3	30
19	3	4	4	2	3	2	2	23
20	4	6	6	4	3	3	3	32
21	5	7	6	5	5	4	3	38
22	5	5	5	4	4	3	2	31
23	4	6	6	4	3	4	3	34
24	4	6	5	3	3	3	3	30
25	5	6	4	3	3	3	3	30
26	4	6	5	3	2	2	2	27
27	4	5	4	3	2	2	1	24
28	4	4	4	3	2	2	2	24
29	5	5	6	4	2	1	1	26
30	2	2	2	1	0	0	0	08
31	3	4	3	2	2	1	0	17

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA AT WILKES DURING JANUARY

<u>Day</u>	<u>Time</u>		<u>Type</u>
	<u>h</u>	<u>m</u>	
13	18	59	ssc [Ⓚ]

