Mr. Dooley

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

GEOPHYSICAL OBSERVATORY REPORT

VOL. 6 No. 7

JULY

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Minister for National Development

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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This Report was prepared in the Geophysical Section:

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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 :-

Chief Geophysicist,
Bureau of Mineral Resources,
Geology & Geophysics,
203 Collins Street,
MELBOURNE, C1.
A U S T R A L I A.

CONTRIBUTING OBSERVATORIES

WATHEROO MAGNETIC OBSERVATORY P.M. McGregor, Observer-in-Charge.

Geographic Latitude	30°19'S	Longitude	115°53'E
Geomagnetic Latitude	-41.8°	Longitude	185.6°

Instruments

Magnetic Equipment - Askania pattern Magnetometer No.506810.
La Cour pattern BMZ No.120.
Askania Earth Inductor No.5111079.
Eschenhagen pattern D,H,Z, recording variometers, normal sensitivity, 20mm/hour recorder.
La Cour pattern D,H,Z, recording variometers, normal sensitivity, quick run (180mm/hour) recorder.
Askania Eschenhagen type H variometer with visual recorder 20mm/hour.

Hourly values of ionospheric characteristics and other ionospheric data for Watheroo are included in a separate publication.

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

Magnetic Equipment - Magnetometer D.T.M. C.I.W. No.7.
La Cour pattern QHMs Nos.291,292,293.
La Cour pattern BMZ No.120.
La Cour pattern D,H,Z, recording variometers, normal sensitivity, 15mm/hour recorder.

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 pattern Magnetometer No.4813.
La Cour pattern QHMs Nos.288,289,290.
Schulze Earth Inductor No.49.
La Cour pattern BMZ No.119.
La Cour pattern D,H,Z, recording variometers, normal sensitivity 15mm/hour recorder.

CONTRIBUTING OBSERVATORIES

MACQUARIE ISLAND MAGNETIC OBSERVATORY A. Turpie, Observer-in-Charge

Geographic Latitude 54°30'S Longitude 158°57'E
Geomagnetic Latitude -61° Longitude 243°

Instruments

La Cour pattern QHMs Nos.177,178,179.
La Cour pattern BMZ No.64.
Kew pattern Magnetometer No.158.
La Cour pattern D,H,Z, recording variometers, low sensitivity 15mm/hour recorder.

MAWSON MAGNETIC OBSERVATORY B.G. Cook, Observer-in-Charge

Geographic Latitude 67°35.7'S Longitude 62°54.0'E
Geomagnetic Latitude -73.1° Longitude 103.4°

Instruments

La Cour pattern QHMs Nos.300,301,302.
La Cour pattern BMZ No.62.
La Cour pattern D,H,Z, recording variometers, low sensitivity 15mm/hour recorder.

CORRIGENDUM

Pages 2 and 3 of the February Report, and the inside front cover and pages 2 and 3 of the April Report should read like those in the March Report.

MAGNETIC K-INDICES FOR JULY - WATHEROO

Range for lower limit of K=9 is 350 gammas

Day	K-Indices								K-Sum
1	4	3	3	2	2	2	2	2	20
2	1	2	2	2	2	1	2	1	13
3	2	2	2	2	2	4	2	2	18
4	1	4	4	3	4	3	4	3	26
5	2	3	2	2	3	3	2	4	21
6	2	2	1	1	1	1	1	0	09
7	1	1	2	3	3	2	3	2	17
8	2	2	7	7	7	9	8	7	49
9	3	3	3	5	5	4	2	4	29
10	2	3	2	2	3	1	3	3	19
11	3	3	3	3	3	3	3	3	24
12	4	3	4	3	3	4	3	2	26
13	2	3	3	3	1	3	2	3	20
14	2	3	3	2	2	3	2	1	18
15	1	(0	1)	1	2	1	1	1	08
16	1	2	1	1	0	2	2	2	11
17	4	4	4	3	1	1	1	1	19
18	3	3	4	4	4	3	4	3	28
19	3	2	5	2	3	1	5	4	25
20	4	4	3	3	3	3	2	2	24
21	3	3	4	1	2	4	6	5	28
22	3	3	3	2	4	3	1	1	20
23	3	2	2	1	1	0	1	0	10
24	2	1	1	1	2	3	4	2	16
25	2	2	3	4	4	3	4	3	25
26	3	2	2	3	2	2	1	2	17
27	2	4	4	4	4	3	4	3	28
28	3	3	1	1	1	1	1	2	13
29	3	2	2	1	1	0	2	2	13
30	2	3	3	1	1	2	2	2	16
31	1	3	2	2	1	5	2	2	18

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR JULY

WATHEROO	-	Declination	2°41.'0 west
		Horizontal Intensity	24879 gamma
		Vertical Intensity	-52293 gamma

SOLAR FLARE EFFECT

Day	Began h	m	K	K'	
29	03	02	3	2	Confirmed by ionospheric observations

MAGNETIC K-INDICES FOR JULY - TOOLANGI

Range for lower limit of K=9 is 500 gammas

Day	K-Indices								K-Sum
1	4	3	3	4	3	2	2	1	22
2	3	2	2	2	1	2	2	2	16
3	3	3	2	2	2	4	3	2	21
4	2	3	4	3	3	3	4	3	25
5	3	2	2	3	3	2	2	4	21
6	2	3	2	1	2	2	2	2	16
7	2	2	2	3	3	2	3	3	20
8	2	4	7	7	7	9	8	7	51
9	5	4	6	6	5	4	2	4	36
10	5	3	3	3	3	1	2	3	23
11	3	3	3	3	3	3	3	3	24
12	3	3	4	3	3	3	3	2	24
13	3	3	3	3	1	2	1	2	18
14	3	3	3	3	3	3	1	1	20
15	2	2	1	2	3	1	1	2	14
16	2	2	1	1	2	2	2	2	14
17	4	4	3	3	2	0	1	1	18
18	4	3	5	4	4	3	3	3	29
19	3	3	5	3	4	2	4	4	28
20	3	4	3	3	3	4	2	2	24
21	3	3	3	2	2	4	5	4	26
22	4	3	3	3	4	3	1	2	23
23	2	2	1	2	2	0	0	2	11
24	2	2	2	1	2	4	4	3	20
25	3	3	4	4	4	3	3	3	27
26	4	3	2	3	2	2	2	3	21
27	3	3	6	5	4	3	4	3	31
28	3	4	2	1	1	1	2	2	16
29	2	3	1	1	1	0	3	3	14
30	2	2	2	1	1	3	1	2	14
31	2	2	2	2	1	4	2	2	17

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR JULY

TOOLANGI	- Declination	10° 10.'6	east
	Horizontal Intensity	22686	gamma
	Vertical Intensity	-56436	gamma

MAGNETIC K-INDICES FOR JULY - MACQUARIE ISLAND

Range for lower limit of K=9 is 1500 *gammas*

Day	K-Indices								K-Sum
1	3	3	4	6	5	3	1	2	27
2	1	1	2	2	2	2	1	1	12
3	2	1	3	2	3	5	3	2	21
4	1	2	4	4	5	5	3	3	27
5	2	1	3	3	5	3	1	2	20
6	2	2	0	1	2	2	0	0	09
7	0	1	2	4	3	2	2	2	16
8	3	3	7	8	7	8	9	7	52
9	5	6	6	7	8	5	3	3	43
10	3	4	4	4	5	1	3	3	27
11	2	2	2	4	-	-	-	-	-
12	3	-	4	6	4	4	2	2	-
13	2	2	3	4	3	3	1	2	20
14	2	3	4	3	5	4	1	0	22
15	1	1	2	4	4	2	1	1	16
16	1	1	2	3	3	3	2	2	17
17	3	4	4	2	2	0	0	1	16
18	3	3	5	5	5	5	4	3	33
19	3	2	5	3	5	3	4	5	30
20	3	5	5	6	5	6	1	1	32
21	2	3	4	3	3	6	8	6	35
22	3	3	2	4	6	4	1	1	24
23	1	2	1	1	3	0	0	1	09
24	2	1	1	1	3	5	4	2	19
25	1	2	5	6	6	6	4	3	33
26	3	3	3	5	4	3	2	1	24
27	1	4	7	6	6	5	5	4	38
28	3	3	2	0	0	0	1	1	10
29	1	1	0	1	0	1	2	1	07
30	1	2	1	1	1	3	2	2	13
31	1	2	4	5	1	6	4	2	25

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR JULY

MACQUARIE ISLAND - Declination, Horizontal Intensity, Vertical Intensity } Will be published when available.

MAGNETIC K-INDICES FOR JULY - MAWSON

Range for lower limit of K=9 is 1500 gammas

Day	K-Indices								K-Sum
1	6	4	5	4	3	3	3	5	33
2	2	3	2	3	3	2	4	5	24
3	5	3	3	2	2	4	4	5	28
4	3	4	5	5	4	5	5	7	38
5	3	3	3	3	3	2	3	6	26
6	5	5	2	1	1	1	2	0	17
7	2	4	3	4	5	4	4	6	32
8	6	7	9	9	8	7	8	7	61
9	7	6	5	6	4	5	4	8	45
10	8	4	6	3	3	2	5	6	37
11	6	5	4	3	3	2	4	6	33
12	4	4	5	6	3	4	5	4	35
13	3	5	6	3	3	4	4	4	32
14	4	6	5	4	2	4	3	5	33
15	5	4	3	2	2	3	3	5	27
16	5	3	2	2	2	4	4	6	28
17	4	6	6	4	1	1	3	3	28
18	5	5	6	5	4	4	6	7	42
19	5	5	6	4	3	2	6	7	38
20	6	5	6	5	3	5	2	5	37
21	4	5	6	3	3	6	7	7	41
22	5	4	4	4	4	3	2	2	28
23	2	3	3	2	1	2	1	5	19
24	6	4	2	2	2	4	4	6	30
25	3	3	6	6	4	4	7	6	39
26	5	6	4	3	2	2	6	4	32
27	5	6	5	5	3	4	5	5	38
28	6	4	4	1	0	0	1	1	17
29	1	1	1	1	0	1	2	3	10
30	4	3	3	2	1	5	4	5	27
31	4	3	4	4	2	6	4	5	32

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR JULY

MAWSON - Declination, Horizontal Intensity, Vertical Intensity) Will be published when available.

PRINCIPAL MAGNETIC STORMS AT WATHEROO DURING JULY

Began at d h m	Ended at d h	Intensity	Maximum K-Index
08 07 48	09 17	s	9
21 16 37	22 14	ms	6

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA AT WATHEROO DURING JULY

Day	Time h m	Type
08	07 48	ssc*
13	22 10	si
19	19 55	bp
21	16 37	ssc*
28	23 48	si
29	01 05	si

PRINCIPAL MAGNETIC STORMS AT TOOLANGI DURING JULY

Began at d h m	Ended at d h	Intensity	Maximum K-Index
08 07 49	10 14	s	9
21 16 37	22 16	m	5

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA AT TOOLANGI DURING JULY

Day	Time h m	Type
08	07 49	ssc*
13	22 09	si
19	06 55	b
21	16 37	ssc*
27	07 41	bs
28	05 51	si
28	05 56	si
31	15 31	si