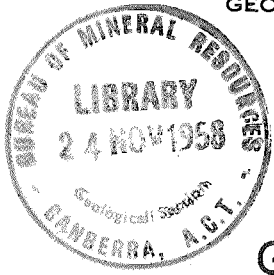


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COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES.
GEOLOGY AND GEOPHYSICS



GEOPHYSICAL OBSERVATORY REPORT

VOL. 6

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AUGUST
1958

*Issued under the authority of Senator The Hon. W. H. Spooner,
Minister for National Development*

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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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H. TEMPLE WATTS - A/Deputy Director

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

CONTRIBUTING OBSERVATORIESWATHEROO 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.508810.
 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 $54^{\circ}30'S$ Longitude $158^{\circ}57'E$
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 $67^{\circ}35.7'S$ Longitude $62^{\circ}54.0'E$
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.

MAGNETIC K-INDICES FOR AUGUST - WATHEROO

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	4	3	2	2	18	
2	2	3	2	2	3	3	1	2	18
3	2	3	1	2	3	2	1	1	15
4	3	2	2	1	1	1	1	1	12
5	1	2	2	1	2	1	1	1	11
6	2	3	2	1	0	1	1	1	11
7	2	2	3	3	3	0	2	2	17
8	1	1	2	0	2	2	1	1	10
9	2	2	3	0	1	1	1	2	12
10	3	3	3	3	2	3	3	4	24
11	4	3	3	4	3	1	2	2	22
12	2	4	3	2	2	1	1	2	17
13	3	4	3	3	1	1	1	2	18
14	2	2	2	1	0	1	3	3	14
15	2	4	2	1	1	1	1	2	14
16	3	2	3	2	2	3	2	2	22
17	1	2	5	3	5	6	6	5	33
18	4	5	5	3	2	2	3	3	27
19	3	4	3	2	2	3	2	2	21
20	3	2	3	3	1	1	1	2	16
21	2	2	(0)	2	2	1	2	2	13
22	5	4	3	2	1	1	1	2	19
23	4	3	3	2	1	1	2	3	19
24	6	6	5	4	5	3	3	3	35
25	4	3	4	2	3	1	1	1	19
26	2	3	2	3	3	1	2	2	18
27	NO RECORD								
28	-	-	-	2	3	3	4	3	-
29	1	2	3	3	1	1	1	2	14
30	2	3	2	1	2	1	1	2	14
31	2	2	2	2	2	3	1	1	15

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR AUGUST

WATHEROO - Declination 02° 41. '0 west
Horizontal Intensity 24858 gamma
Vertical Intensity -52293 gamma

SOLAR FLARE EFFECT

<u>Day</u>	<u>Began</u>	<u>K</u>	<u>K'</u>	
	h m			
09	03 49	2	2	Confirmed by ionospheric observations
16	04 35	3	2	

MAGNETIC K-INDICES FOR AUGUST - TOOLANGI

Range for lower limit of K=9 is 500 gammas

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

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR AUGUST

TOOLANGI - Declination 10° 10.'8 east
Horizontal Intensity 22694 gamma
Vertical Intensity -56428 gamma

SOLAR FLARE EFFECT

<u>Day</u>	<u>Began</u>	<u>K K'</u>	
	h m		
09	03 49	3 2	Confirmed by ionospheric observations
16	04 35	3 2	

MAGNETIC K-INDICES FOR AUGUST - MACQUARIE ISLAND

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Sum</u>				
1	2	1	0	4	4	2	1	1	15
2	1	1	2	2	4	4	1	2	17
3	1	2	3	3	4	2	0	1	16
4	1	1	0	0	2	1	0	1	06
5	1	1	2	3	3	1	0	1	12
6	1	1	0	0	0	0	0	1	03
7	1	1	4	5	6	2	2	1	22
8	1	0	0	0	4	3	0	0	08
9	1	1	1	0	0	2	0	1	06
10	1	2	3	2	3	4	2	1	18
11	2	2	4	6	4	3	2	1	24
12	1	3	2	4	4	0	1	1	16
13	2	4	5	4	1	1	0	0	17
14	2	1	0	0	0	1	3	2	09
15	3	3	1	1	2	1	1	1	13
16	2	2	2	1	4	4	2	1	18
17	1	1	6	6	6	8	7	6	41
18	4	6	4	3	3	1	2	2	25
19	2	2	2	3	3	1	3	1	17
20	1	1	1	1	2	1	0	1	08
21	1	1	0	2	3	1	1	1	10
22	4	6	6	4	3	3	2	1	29
23	1	4	3	2	2	2	2	3	19
24	6	7	5	7	7	4	4	2	42
25	4	4	4	4	3	1	1	1	22
26	1	4	4	6	5	3	3	2	28
27	5	7	9	7	6	5	4	3	46
28	1	2	2	4	5	4	5	2	25
29	2	2	2	5	3	1	1	1	17
30	2	2	2	2	2	2	1	1	14
31	2	2	2	3	3	5	1	0	18

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR AUGUST

MACQUARIE ISLAND - Declination 25° 19. '1 east
 Horizontal Intensity 13301 gamma
 Vertical Intensity -64474 gamma

PRELIMINARY MEAN VALUES OF THE MAGNETIC ELEMENTS FOR JULY

MACQUARIE ISLAND - Declination 25° 18. '2 east
 Horizontal Intensity 13293 gamma
 Vertical Intensity -64489 gamma

MAWSON - K-Indices and Preliminary Monthly Values of the
 Magnetic Elements for August will be published
 when available.

PRINCIPAL MAGNETIC STORMS AT WATHEROO DURING AUGUST

<u>Began at</u> d h m	<u>Ended at</u> d h	<u>Intensity</u>	<u>Maximum</u> <u>K-Index</u>
17 06 22	18 12	ms	6
24 01 40	25 14	ms	6

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA AT WATHEROO DURING AUGUST

<u>Day</u>	<u>Time</u> h m	<u>Type</u>
17	06 22	ssc*
22	02 27	ssc*
24	01 40	ssc
28	18 25	bps

PRINCIPAL MAGNETIC STORMS AT TOOLANGI DURING AUGUST

<u>Began at</u> d h m	<u>Ended at</u> d h	<u>Intensity</u>	<u>Maximum</u> <u>K-Index</u>
17 06 03	18 11	m	6
22 02 28	22 08	m	5
24 01 40	25 14	ms	6
27 03 03	28 21	ms	6

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA AT TOOLANGI DURING AUGUST

<u>Day</u>	<u>Time</u> h m	<u>Type</u>
11	11 05	bps
17	06 23	ssc*
17	22 43	si
22	02 28	ssc*
24	01 40	ssc
25	02 28	si
27	03 03	ssc*
27	05 42	si