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

GEOPHYSICAL OBSERVATORY REPORT

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JANUARY

1962

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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

J. M. RAYNER - Director

This Report was prepared in the Geophysical Branch;

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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 OBSERVATORIESGNANGARA 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
 Askania earthinductor No. 5111079
 La Cour QHMs No. 291, 292, 293
 La Cour BMZ No. 120
 Eschenhagen D, H & Z recording variometers
 Sensitivity : D 1.07 min/mm
 H 2.2 Y/mm
 Z 5.0 Y/mm
 Recording speed : 20 mm/hour
 Askania (Eschenhagen type) D variometer with visual recorder
 Sensitivity : 3 Y/mm
 Recording speed : 20 mm/hour
 La Cour rapid run variometers are being installed

MACQUARIE ISLAND MAGNETIC OBSERVATORY R.J.S. Cooke, Observer in Charge

Geographic Latitude $54^{\circ}30'S$ Longitude $158^{\circ}57'E$
 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
 Normal sensitivity: D 0.9 min/mm
 H 12.5 Y/mm
 Z 14.1 Y/mm
 Recording speed : 15 mm/hour
 Low sensitivity : D 2.3 min/mm
 H 63 Y/mm
 Z 59 Y/mm
 Recording speed : 15 mm/hour

CONTRIBUTING OBSERVATORIESMAWSON MAGNETIC OBSERVATORY R.J. Hollingsworth, Observer in Charge

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

Instruments

La Cour QHMs Nos. 300, 301, 302

La Cour BMZ No. 62

La Cour D, H & Z recording variometers

Normal sensitivity : D 0.8 min/mm
 H 9.9 Y/mm
 Z 10.3 Y/mm

Recording speed : 15 mm/hour

Low sensitivity : D 2.4 min/mm
 H 52 Y/mm
 Z 51 Y/mm

Recording speed : 15 mm/hour

Bar fluxmeter magnetograph H, D, Z components

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

La Cour QHMs Nos. 187, 188, 189

La Cour BMZ No. 68

Askania declinometer No. 580333

Askania earthinductor No. 5111081

La Cour D, H & Z recording variometers

Standard instrument : Sensitivity : D 0.9 min/mm
 H 5.6 Y/mm
 Z 7.2 Y/mm

Recording speed : 15 mm/hour

Rapid-run instrument: Sensitivity : D 0.6 min/mm
 H 1.8 Y/mm
 Z 3.0 Y/mm

Recording speed : 180 mm/hour

CONTRIBUTING OBSERVATORIESTOOLANGI 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
 Schulze earthinductor No.49
 La Cour QMHs 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

WILKES MAGNETIC OBSERVATORY R. Underwood, Observer in Charge

Geographic Latitude $66^{\circ}15'S$ Longitude $110^{\circ}35'E$
 Geomagnetic Latitude -77.2° Longitude 179.2°

Instruments

C.I.W. field magnetometer and theodolite earthinductor No.28
 La Cour QMHs Nos.492, 493, 494
 La Cour BMZ No.236

Ruska D, H & Z recording variometers

Standard instrument : Sensitivity : D 10.6 min/mm
 H 24 Y/mm
 Z 24 Y/mm

Recording speed : 20 mm/hour
 Rapid-run instrument: Sensitivity : D 1.3 min/mm

 H 5.3 Y/mm
 Z 6.3 Y/mm
 Recording speed : 240 mm/hour

M A W S O NMAGNETIC K-INDICES - JANUARY 1962

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Indices</u>				<u>K-Sum</u>
1	2	2	3	2	1	5	4	5	24
2	3	4	3	3	2	4	3	3	25
3	2	2	3	1	3	4	3	3	21
4	2	2	2	1	1	1	2	2	13
5	2	1	1	1	1	3	3	3	15
6	2	1	2	3	3	2	2	2	17
7	1	2	3	3	4	5	4	5	27
8	1	2	3	3	3	1	2	4	19
9	1	3	3	4	3	4	4	6	28
10	5	6	6	6	6	5	4	5	43
11	4	3	3	4	4	4	4	3	29
12	2	2	2	2	3	4	4	3	22
13	2	3	3	3	3	3	3	2	22
14	2	2	4	5	4	5	4	4	30
15	4	3	3	3	4	6	5	5	33
16	4	3	4	4	5	5	4	4	33
17	2	2	2	3	3	3	3	3	21
18	2	2	2	3	1	2	4	5	21
19	6	3	5	5	4	3	4	4	34
20	2	2	2	2	3	4	4	4	23
21	2	4	3	2	2	5	3	3	24
22	2	0	0	0	0	0	2	3	07
23	1	0	0	0	2	4	2	2	11
24	0	0	2	2	3	5	2	3	17
25	3	3	2	2	1	4	4	3	22
26	2	3	4	4	4	3	5	6	31
27	4	3	4	3	5	5	4	3	31
28	3	2	2	1	3	4	3	5	23
29	2	3	3	3	1	5	4	4	25
30	3	2	3	4	2	4	3	3	24
31	2	1	1	0	0	1	2	3	10

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1962	H	D	Z
	Y	°	Y
January	18350	60 23.9W	-48666

W I L K E SMAGNETIC K-INDICES - JANUARY 1962

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

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1962	H	D	Z
	Y	°	Y
January	9229	84 40.0W	-64898

MACQUARIE ISLANDMAGNETIC K-INDICES - JANUARY 1962

Range for lower limit of K=9 is 1500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	2	2	1	1	1	0	2	1	10
2	2	2	4	5	4	3	1	1	22
3	0	0	0	1	3	0	0	0	04
4	0	0	0	2	1	0	0	0	03
5	0	1	0	1	1	0	0	0	03
6	1	1	0	1	0	1	1	1	06
7	0	0	0	2	2	1	1	1	07
8	0	1	1	1	3	3	0	0	09
9	1	0	0	2	4	4	2	2	15
10	3	7	3	7	7	7	6	4	44
11	4	4	3	3	4	3	2	1	24
12	1	1	1	0	0	0	1	0	04
13	1	1	2	1	2	1	0	2	10
14	2	1	1	3	3	6	3	3	22
15	2	2	3	4	3	3	1	2	20
16	2	3	4	5	6	3	1	1	25
17	1	2	1	0	1	1	1	1	08
18	1	1	1	2	1	2	1	0	09
19	2	3	3	4	7	7	4	1	31
20	1	2	2	1	0	0	1	1	08
21	1	2	3	2	6	0	0	1	15
22	1	1	0	0	0	0	0	0	02
23	0	0	0	0	0	0	0	0	00
24	0	0	0	0	0	0	0	0	00
25	0	2	2	4	1	0	0	2	11
26	2	1	1	2	3	3	1	2	15
27	1	2	3	5	2	0	1	2	16
28	1	2	1	1	0	0	0	0	05
29	0	2	1	0	4	3	0	1	11
30	1	2	2	2	4	3	0	1	15
31	0	0	0	0	0	0	0	0	00

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1962	H	D	Z
	Y	°	Y
January	13230	25 52.7E	-64340

T O O L A N G IMAGNETIC K-INDICES - JANUARY 1962

Range for lower limit of K=9 is 500 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	1	3	3	1	1	0	0	1	10
2	2	3	3	4	1	2	1	2	18
3	2	1	1	0	2	1	1	2	10
4	1	1	1	2	1	0	1	1	08
5	2	2	0	1	1	0	0	2	08
6	2	2	0	1	0	1	2	2	10
7	2	2	1	1	1	1	1	2	11
8	1	1	1	2	2	2	1	2	12
9	1	2	1	1	3	3	3	1	15
10	3	6	5	6	5	5	4	3	37
11	3	3	3	3	2	2	2	1	19
12	2	2	2	1	1	1	1	2	12
13	1	2	1	1	1	0	1	1	08
14	1	2	2	2	2	3	3	3	18
15	3	2	2	2	2	2	2	3	18
16	3	2	3	2	3	2	2	2	19
17	2	2	1	0	1	2	1	2	11
18	2	1	1	1	1	2	1	1	10
19	3	3	4	3	4	4	3	3	27
20	3	3	2	0	0	0	2	2	12
21	2	2	2	2	4	1	1	1	15
22	1	2	2	0	0	0	0	1	06
23	2	1	0	1	0	0	1	0	05
24	1	2	1	1	0	1	1	1	08
25	No record								
26	3	2	2	2	2	2	2	2	17
27	3	3	3	4	1	1	2	2	19
28	2	1	2	1	0	1	1	1	09
29	1	2	1	2	3	1	2	2	14
30	2	2	2	1	3	2	1	1	14
31	1	1	1	1	0	0	0	1	05

PRELIMINARY MONTHLY MEAN VALUES

Based on 10 selected quiet days

1962	H	D	Z
	Y	°	Y
January	22637	10 21.0E	-56409

T O O L A N G IPRINCIPAL MAGNETIC STORMS - JANUARY 1962

date	storm time		sudden commencements				act-iv-ity	max. activity 0 to 9			Ranges		
	begin	end	type	amplitudes				day	3-hr per.	K	D	H	Z
	h m	d h		D	H	Z							
10	0213	1112	sc*	-1*	+5	+5	ms	10	2,4	6	26	05	56

10 0213 1112 sc* -1* +15 +5 ms 10 2,4 6 26 205 56

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JANUARY 1962

Day	Time		Type		Sense of Movement			Remarks
	h	m			H	D	Z	

01	11	43	pt	C				
02	09	33	bps	B	+	-	+	
03	11	59	bps	B	+	-	+	
03	12	00	pt	C				
05	08	45	pt	B				
05	10	26	pt	B				
06	09	17	pt	A				
06	14	44	pt	B				
07	11	47	pt	A				
08	06	28	pt	B				
08	09	39	pt	B				
08	13	50	pt	B				
09	04	16	pt	C				
09	06	52	pt	B				
09	14	03	pt	B				
09	14	20	bp	C	+	-	+	
10	02	13	ssc*	B	+	-*	+	
No record 0337-0353								
14	07	31	pt	B				
16	11	49	bp	C	+		+	
17	11	51	pt	B				
18	11	14	pt	B				
18	14	45	pt	B				
19	01	13	ssc*	C	+	-*		
19	05	55	pt	B				
19	12	44	pt	B				
21	12	08	bp	B	+	-	+	
22	05	42	pt	B				
23	11	19	pt	B				
24	11	59	pt	C				
24	16	01	pt	C				
No record								
27	09	52	bp	B		-		
28	15	21	pt	C				
30	10	15	pt	C				
30	14	05	pt	C				
30	14	17	bp	B	+	-	+	

G N A N G A R AMAGNETIC K-INDICES - JANUARY 1962

Range for lower limit of K=9 is 350 gammas

<u>Day</u>	<u>K-Indices</u>				<u>K-Sum</u>				
1	3	2	3	2	1	0	0	2	13
2	2	2	4	3	2	2	2	2	19
3	2	1	1	1	2	1	1	2	11
4	2	3	3	1	0	1	1	2	13
5	2	1	1	1	1	1	0	1	08
6	2	2	1	1	1	2	1	2	12
7	2	2	2	1	2	2	2	2	15
8	2	3	2	2	3	3	1	1	17
9	2	2	2	1	3	3	3	2	18
10	4	5	5	7	5	5	5	4	40
11	3	2	3	3	2	3	2	2	20
12	2	2	1	1	0	1	1	1	09
13	1	2	1	1	2	1	1	1	10
14	2	2	3	1	2	3	4	4	21
15	3	2	2	3	3	2	3	4	22
16	2	3	3	3	4	3	3	2	23
17	1	2	1	1	1	2	1	1	10
18	1	1	1	2	1	2	1	2	11
19	3	3	3	2	4	5	4	3	27
20	2	2	2	1	0	1	2	2	12
21	3	1	2	2	3	2	0	2	15
22	2	2	1	1	0	0	0	0	06
23	0	1	1	2	1	0	0	1	06
24	2	2	1	1	1	1	0	1	09
25	1	2	3	3	1	2	1	3	16
26	3	2	2	2	2	2	2	2	17
27	3	3	2	3	2	2	2	3	20
28	3	2	2	1	0	1	1	1	11
29	1	2	1	2	3	1	1	3	14
30	3	4	2	2	3	2	1	2	19
31	1	1	1	0	0	0	0	1	04

Q N A N G A R APRELIMINARY MONTHLY MEAN VALUES

Based on 5 selected quiet days

1962	H	D	Z
	Y	°	Y
January	23951	2 53.2W	-53495

PRINCIPAL MAGNETIC STORMS - JANUARY 1962

date	storm time		sudden commencements				act-iv-ity	max. activity 0 to 9			Ranges		
	begin	end	type	amplitudes				3-hr day	per.	K	D	H	Z
				D	H	Z							
	h m	d h											
10	0213	1109	ssc*	-3*	+5	-10*	ms	10	4	7	24	180	166

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JANUARY 1962

<u>Day</u>	<u>Time</u> h m	<u>Type</u>	Sense of Movement			<u>Remarks</u>
			H	D	Z	
03	11 58	pt B				
04	10 20	pt B				
04	17 45	pt B				
07	11 45	pt B				
07	18 18	pt B				
08	13 56	pt B				
09	14 00	pt B				
10	02 13	ssc*				
17	11 50	pt B	+	-*	-*	
18	11 13	pt B				
18	14 42	bp B	+			
18	15 36	bp B	+			
18	16 11	bp B	+	+	+	
19	01 12	ssc*	+	-*	-*	
24	16 00	pt A				

P O R T M O R E S B YMAGNETIC K-INDICES - JANUARY 1962

Range for lower limit of K=9 is 300 gammas

<u>Day</u>	<u>K-Indices</u>								<u>K-Sum</u>
1	1	2	2	1	1	0	1	2	10
2	2	3	3	3	2	3	1	0	17
3	0	0	0	1	2	0	0	0	03
4	0	0	0	2	0	0	0	0	02
5	0	0	0	1	1	0	0	1	03
6	2	2	0	2	1	1	0	0	08
7	1	3	1	2	2	2	2	0	13
8	2	1	2	2	2	3	1	2	15
9	2	2	2	2	3	3	3	2	19
10	4	5	5	7	5	4	5	3	38
11	2	3	-	-	-	-	-	-	--
12	1	2	1	1	1	0	1	1	08
13	-	-	-	-	-	-	-	-	--
14	1	2	2	1	2	1	1	1	11
15	3	3	3	3	2	2	2	2	20
16	1	1	3	3	3	2	2	1	15
17	2	2	1	1	2	2	1	1	12
18	1	1	2	1	2	2	1	1	11
19	3	4	4	3	4	3	2	2	25
20	2	2	2	1	1	1	2	1	12
21	3	2	2	2	4	1	1	1	16
22	2	1	1	1	0	1	0	2	08
23	1	2	1	1	0	1	0	1	07
24	1	1	1	0	1	2	0	1	07
25	0	2	3	3	1	2	1	2	14
26	4	3	2	2	2	2	2	2	19
27	2	3	2	2	2	1	2	2	16
28	2	1	2	1	1	1	1	1	10
29	1	2	1	2	4	1	1	3	15
30	2	2	2	2	3	2	0	2	15
31	2	1	1	0	0	0	0	0	04

P O R T M O R E S B YPRINCIPAL MAGNETIC STORMS - JANUARY 1962

storm time			sudden commencements			act-iv-ity	max. activity			Ranges			
date	begin	end	type	amplitudes			0 to 9						
				D	H		Z	day	3-hr per.	K	D	H	Z
	h m	d h											
10	0213	1020	sc	-	31	29	ms	10	4	7	8	204 108	

SUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JANUARY 1962

Day	Time h m	Type	Sense of Movement			Remarks
			H	D	Z	
01	15 53	pt	B			
02	09 36	bpa	B			
03	11 57	bpa	B			
04	10 24	pt	C			
04	14 36	pt	B			
04	17 45	pt	B			
05	10 51	pt	B			
05	22 40	pt	B			
06	09 35	pt	B			
06	10 40	pt	B			
06	14 43	pt	C			
06	19 27	pt	B			
07	11 47	pt	C			
07	13 10	pt	B			
07	14 25	pt	C			
07	18 11	pt	B			
08	14 00	pt	B			
09	02 23	pt	C			
09	03 17	pt	C			
09	04 15	pt	C			
09	11 45	pt	B			
10	02 12	ssc	B	+	+	+
11	No record 0700-2400					
12	(Nil)					
13	10 35	pt	B			
14	12 15	pt	B			
14	13 58	pt	B			
14	14 50	pt	C			
15	13 20	pt	C			
16	11 42	bp	C	+	+	+
16	17 05	bp	C	+	+	+
17	11 52	pt	B			
17	13 59	pt	C			
17	14 58	pt	B			
17	20 07	pt	C			

Contd.

P O R T M O R E S B YSUDDEN COMMENCEMENTS AND OTHER PHENOMENA - JANUARY 1962 CONTD.

<u>Day</u>	<u>Time</u> h m	<u>Type</u>		<u>Sense of Movement</u>			<u>Remarks</u>
				<u>H</u>	<u>D</u>	<u>Z</u>	
18	04 40	pt	B				
18	14 45	pt	B				
19	01 13	ssc	B				
19	12 45	pt	B				
20	(N11)						
21	12 07	bp	C	+	-	+	
21	12 07	pt	B				
22	16 08	pt	B				
23	16 24	pt	B				
24	06 22	pt	C				
24	11 57	pt	B				
24	16 00	pt	A				
24	17 13	pt	B				
25	10 03	pt	B				
25	14 30	pt	B				
25	22 23	pt	B				
26	10 10	pt	C				
27	00 50	pt	B				
27	17 41	pt	B				
28	14 35	pt	B				
28	22 00	pt	B				
29	12 34	pt	B				
30	14 14	bp	B	+	-	+	
30	10 30	pt	C				
31	01 44	pt	B				
31	18 17	pt	C				