

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

1. Instrument

The records are standard La Cour variometer and an F.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31,
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

	Normal La Cour	Storm La Cour	Fluxgate
Temperature Coefficient	0.29	0.29	0.29
Scale Value	1.4	1.4	1.4
Temperature	22.3	27.0	27.6
Scale Value	1.4	1.4	1.4
Temperature	22.3	27.0	27.6

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc. baselines (at T_S = 0°C for H, Z)
- q_H , temperature coefficients
- s_H . scale values
- n_H . ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22,572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22,572 + 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 - s_T n_T))$$

$$Z = -35,062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35,062 - 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_0 - s_D n_D$$

$$D = 16^\circ 24.0' - (0.92 \times 30.8)'$$

$$= 16^\circ 52.3' \text{ East}$$

Day	H	Z	D	T
1	22,572	-35,063	16° 24.0'	22,572
2	"	"	"	"
3	"	"	"	"
4	"	"	"	"
5	22,573	"	"	"
6	"	"	"	"
7	"	"	"	"
8	"	"	16° 23.9'	"
9	"	"	"	"
10	"	"	"	22,572
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	"	"
16	"	"	"	"
17	22,574	"	"	"
18	"	"	"	"
19	"	"	"	"
20	"	"	16° 23.8'	"
21	"	"	"	"
22	"	"	"	"
23	"	"	"	"
24	"	-35,063	"	"
25	"	"	"	"
26	"	"	"	"
27	"	"	"	"
28	22,575	"	"	"
29	"	"	"	"
30	"	"	"	"
31	"	"	"	"

Storm La Cour Baselines

10	22,453	-35,187	16° 23.7'
21	"	"	16° 23.4'
29	"	-35,190	16° 23.3'

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1. Instrument

The charts are standard La Cour variometer and an F.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31,
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale Value

	H mm	D mm	Z mm	T °C mm
Normal La Cour Jan 01 - May 28	4.32	0.92	2.32	0.45
Storm La Cour May 29 - Dec 31	4.02	0.92	2.30	0.40
Fluxgate	15.1	2.17	-15.8	-

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H_T) are valid when the T trace is below H_T. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc., baselines (at T_S = 0°C for H, Z)
- q_H, temperature coefficients
- s_H, scale values
- n_H, ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (T_0 + s_T n_T))$$

$$H = 22,572 + (4.32 \times 1.4) + (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22,572 + 6 + 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 + s_T n_T))$$

$$Z = -35,062 + ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 + (0.45 \times 27.6)))$$

$$= -35,062 - 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_0 - s_D n_D$$

$$= 16^\circ 24.0' + (0.92 \times 30.8)'$$

$$= 16^\circ 52.3' \text{ East}$$

Day	H	Z	D	T
1	"	-35,063	16° 23.8'	"
2	"	"	"	"
3	"	"	16° 23.9'	"
4	"	"	"	"
5	"	"	"	"
6	"	"	"	"
7	"	-35,064	"	"
8	"	"	"	"
9	"	"	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	"	"
16	"	"	"	"
17	"	"	"	"
18	"	"	"	22.6
19	"	"	16° 23.8'	"
20	"	"	"	"
21	"	"	"	"
22	"	"	"	"
23	"	"	16° 23.7'	"
24	"	"	"	"
25	"	"	"	"
26	"	"	16° 23.6'	"
27	"	"	"	22.7
28	"	"	"	"
29	"	-35,065	"	"
<u>Storm La Cour Baselines</u>				
19	22,453	-35,191	23.4	
20	"	"	"	
<u>Fluxgate Baselines</u>				
23	22,072	-34,564	15° 48.5'	

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Phone (0223) 61188

1. Instrument

The charts are standard La Cour barometer and an F.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31,
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale value

	H mm	D mm	Z mm	T mm
Normal La Cour	4.32	0.92	3.1	0.45
Storm La Cour	8.64	1.84	6.2	0.90
Fluxgate	1.51	0.31	1.53	

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc., baselines (at T_S = 0°C for H, Z)
- q_H, temperature coefficients
- s_H, scale values
- n_H, ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22.572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22,572 - 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 - s_T n_T))$$

$$= -35.062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35,062 - 3 - 107$$

$$= -35.166 \text{ gammas.}$$

$$D = D_0 - s_D n_D$$

$$= 16^\circ 24.0' - (0.92 \times 30.8)'$$

$$= 16^\circ 52.3' \text{ East}$$

Day	H	Z	D	T
1	22.572		16° 23.6'	
2	"	"	"	"
3	"	"	"	"
4	22.576	"	"	"
5	"	"	"	22.8
6	"	"	16° 23.7'	"
7	"	"	"	"
8	"	"	"	"
9	"	"	"	"
10	"	"	16° 23.8'	"
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	16° 23.9'	"
16	"	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	"	"	"
20	"	"	"	"
21	"	"	"	"
22	"	"	"	"
23	"	"	"	"
24	"	"	"	"
25	"	"	"	"
26	"	"	"	"
27	"	"	"	"
28	"	"	16° 23.8'	"
29	"	"	"	"
30	"	"	"	"
31	"	"	"	"

Storm La Cour Baselines			
8	-	-35,196	-
26	22,452	-	-
Fluxgate Baselines			
26		-34,567	-

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MAGNETIC RECORDS FOR 1976

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LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

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1. Instrument

There are standard La Cour variometer and an F.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

~~Due to~~ parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31,
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale Value

	H mm	D mm	Z mm	T mm
Normal La Cour	4.32	0.92	3.1	0.45
Storm La Cour	8.64	1.84	6.2	0.90
Fluxgate	17.28	3.68	12.4	1.80

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H_o) are valid when the T trace is below H_o. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H_o etc., baselines (at T_S = 0°C for H, Z)
- q, temperature coefficients
- s, scale values
- n, ordinates in mm.

$$H = H_o - s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22,572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22,572 - 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_o - s_Z n_Z - q_Z (T_S - (T_o - s_T n_T))$$

$$= -35,062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35,062 - 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_o + s_D n_D$$

$$= 16^\circ 24.0' - (0.92 \times 30.8)'$$

$$= 16^\circ 52.3' \text{ East}$$

Date	H	Z	D	T
1	22,576	0	16° 23.6'	22.8
2	"	"	"	"
3	"	"	"	"
4	"	"	"	"
5	"	"	"	"
6	22,577	"	16° 23.7'	"
7	"	"	"	"
8	"	"	"	"
9	"	"	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	"	"
16	"	"	16° 23.6'	"
17	"	"	"	22.9
18	"	"	"	"
19	"	"	"	"
20	"	"	"	"
21	"	"	"	"
22	"	"	16° 23.5'	"
23	"	"	"	"
24	"	"	"	"
25	"	See below	"	"
26	22,576	-35,074	"	"
27	"	"	"	23.0
28	"	"	"	"
29	"	"	"	"
30	"	"	16° 23.4'	"

On 25th April, the Z baseline changed in four steps, visible on the magnetogram; at 0900 to -35,069, at 1300 to -35,071, at 1500 to -35,073 and at 1900 to -35,074.

Storm La Cour Baselines

1	22,452	-	-
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Fluxgate Baselines

1	-	-34,563	-
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	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31.
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

	H ₀ mm	D ₀ mm	Z ₀ mm	T ₀ °C
Normal La Cour	4.3	0.29	-	0.45
Storm La Cour	4.0	0.29	11.0	0.45
Fluxgate	4.1	0.17	-11.3	-

During storms, the Fluxgate scale values are, if necessary, automatically increased ('Fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc.. baselines (at T_S = 0°C for H, Z)
- q . temperature coefficients
- s . scale values
- n . ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22.572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22.572 - 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 - s_T n_T))$$

$$Z = -35.062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35.062 - 3 - 107$$

$$= -35.166 \text{ gammas.}$$

$$D = D_0 - s_D n_D$$

$$= 16^{\circ}24.0' - (0.92 \times 30.8)'$$

$$= 16^{\circ}52.3' \text{ East}$$

Day	H	Z	D	λ
1	22,685	-35,062	16° 24.0'	24.0
2	"	"	"	"
3	"	"	"	"
4	"	"	"	"
5	"	"	"	"
6	"	-35,075	"	"
7	"	"	"	23.1
8	"	"	"	"
9	"	"	"	"
10	"	"	"	"
11	"	"	16° 23.3'	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	"	"
16	"	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	"	"	23.2
20	"	"	"	"
21	"	"	"	"
22	"	"	"	"
23	"	"	"	"
24	"	"	"	"
25	"	"	"	"
26	"	"	"	"
27	"	"	"	"
28	"	"	"	"
29	"	-34,999	16° 27.2'	"
30	"	"	"	"
31	"	"	"	"
<u>Storm La Cour Baselines</u>				
3	22,452	-	-	
28	"	-35,191	16° 22.6'	
29	"	"	"	
<u>Fluxgate Baselines</u>				
3	-	-35,594	"	

Normal barometer height for 11 and 1 during 1946 and 31 of May

<u>Day</u>	<u>Hour</u>	<u>H</u>	<u>I</u>	<u>Day</u>	<u>Hour</u>	<u>H</u>	<u>I</u>
May 29	03	22498	14.5°C	May 30	07	22514	15.7
	04	99	14.6		08	15	15.8
	05	22500	"		09	15	"
	06	01	"		10	15	"
	07	01	14.7		11	16	15.9
	08	02	"		12	16	"
	09	03	14.8		13	16	16.0
	10	03	"		14	17	"
	11	04	14.9		15	17	16.1
	12	05	"		16	18	"
	13	06	15.0		17	18	"
	14	06	"		18	19	16.2
	15	07	15.1		19	19	"
	16	08	"		20	19	"
	17	08	"		21	20	16.3
	18	09	15.2		22	20	"
	19	09	"		23	20	"
	20	10	15.3	May 31	00	21	16.4
	21	10	15.3		06	21	16.5
	22	11	15.4		10	21	"
	23	11	"		11	22	"
May 20	00	11	"		13	22	16.6
	01	12	15.5		18	22	16.7
	02	12	"		20	23	"
	03	13	15.6		21	23	"
	04	13	"		22	23	"
	05	13	15.7		23	24	"
	06	14	"		24	24	"

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

ARGENTINE ISLANDS A.973

EXPLANATORY NOTES, 1976

1. Instruments

The charts are standard La Cour barometer and an I.D.Z. Fluxgate magnetometer, all recording on D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31,
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1 γ /°C	+3.1 γ /°C
May 29 - Dec 31	-2.3	-2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

Station	Period	H (mm)	D (mm)	Z (mm)	Scale
Normal La Cour	Jan 1 - May 28	22.572	16.024	22.306	100
Storm La Cour	May 29 - Dec 31	44.144	32.048	44.612	200
Fluxgate		11.41	11.17	-11.27	-

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc.. baselines (at T_S = 0°C for H, Z)
- q . temperature coefficients
- s . scale values
- n . ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22.572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22.572 - 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 - s_T n_T))$$

$$Z = -35.062 - ((-2.32) \times (-1.1)) - 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35.062 - 3 - 107$$

$$= -35.166 \text{ gammas.}$$

$$D = D_0 - s_D n_D$$

$$= 16^{\circ}24.0' - (0.92 \times 30.8)'$$

$$= 16^{\circ}52.3' \text{ East}$$

Day	H (mm)	Z (mm)	D (mm)	Scale
1	22,572	22,306	16,024	100
2	22,528	"	"	16.8
3	22,528	"	"	16.9
4	22,529	"	"	17.0
5	22,531	"	"	17.1
6	22,532	"	"	17.3
7	22,533	"	"	17.4
8	22,534	"	"	17.5
9	22,535	"	"	17.6
10	22,536	"	"	"
11	"	"	"	17.7
12	22,537	"	"	"
13	22,538	"	"	17.8
14	"	"	"	"
15	22,539	"	"	17.9
16	"	"	"	"
17	22,540	"	"	18.0
18	"	"	"	"
19	22,541	"	"	18.1
20	"	"	"	"
21	"	"	"	"
22	22,542	"	"	18.2
23	"	"	"	"
24	"	"	"	"
25	22,543	"	"	"
26	"	"	"	18.3
27	"	"	"	"
28	"	"	"	"
29	"	-35,000	"	"
30	"	"	"	18.4

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

ARGENTINE ISLANDS A.973

EXPLANATORY NOTES, 1976

1. Instruments

The charts are standard La Cour barometer and in F.D.A. Fluxgate magnetometers, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31.
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1 γ / $^{\circ}$ C	+3.1 γ / $^{\circ}$ C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale Value

	H ₀ mm	D ₀ mm	Z ₀ mm	T ₀ °C		
Normal La Cour	Jan 01	May 28	4.3	0.92	22.3	0.45
	May 29	Dec 31	4.32	0.92	22.3	0.45
Storm La Cour			15.3	3.1	11.1	
Fluxgate			15.1	3.1	-15.8	

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc., baselines (at T_S = 0°C for H, Z)
- q_H, temperature coefficients
- s_H, scale values
- n_H, ordinates in mm.

$$H = H_0 - s_{HH} n_H - q_H (T_S - (s_{TT} n_T))$$

$$H = 22,572 + (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22,572 + 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 + s_{ZZ} n_Z - q_Z (T_S - (T_0 - s_{TT} n_T))$$

$$Z = -35,062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35,062 + 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_0 + s_{DD} n_D$$

$$= 16^\circ 24.0' + (0.92 \times 30.8)'$$

$$= 16^\circ 52.3' \text{ East}$$

Argentine Land

July 1976

Normal La Cour Baseline

Day	H	Z	D	I
1	22,543	-35,000	16°27.2'	18.4
2	"	"	"	"
3	"	"	"	"
4	"	"	"	"
5	22,544	"	"	18.5
6	"	"	"	"
7	"	"	"	"
8	22,545	"	"	"
9	"	"	"	"
10	22,546	"	"	"
11	"	"	"	"
12	22,547	"	"	18.6
13	"	-35,001	"	"
14	22,548	"	16°27.1'	"
15	"	"	"	"
16	22,549	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	"	"	18.7
20	"	-35,002	"	"
21	22,550	"	"	"
22	"	"	"	"
23	"	"	"	"
24	22,551	"	"	"
25	"	"	"	"
26	"	"	"	18.8
27	22,552	"	16°27.0'	"
28	"	"	"	"
29	"	"	"	"
30	"	-35,003	"	"
31	"	"	"	18.9

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

1. Instruments

These are standard La Cour variometer and an F.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31,
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale Value

	H mm	D mm	Z mm	T °C mm
Normal La Cour	4.32	0.92	-3.30	0.45
Storm La Cour	15.3	3.32	-11.5	-
Fluxgate	15.1	2.17	-15.3	-

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H_o) are valid when the T trace is below H_o. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H_o etc., baselines (at T_S = 0°C for H, Z)
- q_H, q_Z, temperature coefficients
- s_H, s_Z, scale values
- n_H, n_Z, ordinates in mm.

$$H = H_o - s_H n_H + q_H (T_S - (s_T n_T))$$

$$\begin{aligned}
 H &= 22,572 + (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0))) \\
 &= 22,572 - 6 - 107 \\
 &= 22,685 \text{ gammas.}
 \end{aligned}$$

$$Z = Z_o + s_Z n_Z - q_Z (T_S - (T_o - s_T n_T))$$

$$\begin{aligned}
 Z &= -35,062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 + (0.45 \times 27.6))) \\
 &= -35,062 + 3 - 107 \\
 &= -35,166 \text{ gammas.}
 \end{aligned}$$

$$D = D_o - s_D n_D$$

$$\begin{aligned}
 &= 16^\circ 24.0' + (0.92 \times 30.8)' \\
 &= 16^\circ 52.3' \text{ East}
 \end{aligned}$$

Argentine Field

August 1976

Day	Normal La Cour Baseline			
	H	Z	D	L
1	22,552	-35,003	16° 27.0'	18.9
2	"	"	"	"
3	"	"	"	"
4	"	"	"	"
5	22,551	-35,003	"	"
6	"	"	"	"
7	"	"	"	"
8	"	"	"	19.0
9	"	"	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	"	"
13	"	"	16° 26.9'	"
14	"	"	"	"
15	"	"	"	"
16	"	"	"	"
17	"	-35,004	"	"
18	22,552	"	"	"
19	"	"	"	"
20	"	"	"	"
21	"	"	"	"
22	"	"	"	"
23	"	"	"	"
24	"	"	"	"
25	"	"	"	"
26	22,553	"	"	"
27	"	"	"	"
28	"	"	"	"
29	"	"	16° 26.8'	"
30	"	-35,003	"	"
31	"	"	"	"

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

1. Instrument

The charts included La Cour magnetometer and an I.B.S. Fluxgate magnetometer, all recording on D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31.
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate. in gammas. increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1 γ /°C	+3.1 γ /°C
May 29 - Dec 31	-2.3	-2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

Normal La Cour	May 1 - May 28	May 29 - Dec 31	Z	H	D
	4.0	0.29	3.1	3.1	11.0
Storm La Cour	1.0	0.29	3.1	3.1	11.0
Fluxgate	1.0	0.1	3.1	3.1	-

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc.. baselines (at T_S = 0°C for H, Z)
- q . temperature coefficients
- s . scale values
- n . ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (s_T n_T))$$

$$\begin{aligned}
 H &= 22.572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0))) \\
 &= 22.572 - 6 - 107 \\
 &= 22.685 \text{ gammas.}
 \end{aligned}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 - s_T n_T))$$

$$\begin{aligned}
 Z &= -35.062 - ((-2.32) \times (-1.1)) - 3.1 (0 - (22.3 - (0.45 \times 27.6))) \\
 &= -35.062 - 3 - 107 \\
 &= -35.166 \text{ gammas.}
 \end{aligned}$$

$$D = D_0 - s_D n_D$$

$$\begin{aligned}
 &= 16^{\circ}24.0' - (0.92 \times 30.8)' \\
 &= 16^{\circ}52.3' \text{ East}
 \end{aligned}$$

Day	H	Z	D	±
1	22.572	-35.062	16 ^o 26.3'	19.6
2	"	"	"	"
3	"	"	"	"
4	"	-35.062	"	18.9
5	22.552	"	"	"
6	"	"	"	"
7	"	"	"	"
8	"	"	16 ^o 26.7'	"
9	"	-35.062	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	22.551	"	"	"
16	"	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	"	"	"
20	"	"	16 ^o 26.6'	"
21	"	"	"	"
22	"	"	"	"
23	"	"	"	"
24	"	"	"	"
25	"	"	"	"
26	"	"	"	"
27	"	"	"	"
28	"	"	"	"
29	22.550	"	"	"
30	"	"	"	"

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

ARGENTINE ISLANDS A.973

EXPLANATORY NOTES, 1976

1. Instrument

There are standard La Cour variometer and an F.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31.
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

T increases up the chart
H increased up the chart
D increases up the chart
Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1 γ /°C	+3.1 γ /°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale Value

	H mm	D mm	Z mm	T mm
Normal La Cour Jan 01 - May 27	4.00	0.92	0.00	0.45
Storm La Cour May 29 - Dec 31	8.00	1.84	-2.00	0.90
Fluxgate	15.1	3.17	-11.5	-

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc., baselines (at T_S = 0°C for H, Z)
- q_H, temperature coefficients
- s_H, scale values
- n_H, ordinates in mm.

$$H = H_0 - s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22.572 - (4.32 \times 1.4) - (-3.1) \times (0 - (22.3 - (0.45 \times 27.0)))$$

$$= 22.572 - 6 - 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 - s_Z n_Z - q_Z (T_S - (T_0 - s_T n_T))$$

$$Z = -35.062 - ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 - (0.45 \times 27.6)))$$

$$= -35,062 - 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_0 - s_D n_D$$

$$= 16^{\circ}24.0' - (0.92 \times 30.8)'$$

$$= 16^{\circ}52.3' \text{ East}$$

Normal La Cour Baseline

October 1976

Day	H	Z	D	E
1	22.572	-35.062	16°26.6'	12.9'
2	"	"	"	"
3	"	"	16°26.5'	"
4	"	-35.062	"	"
5	"	"	"	"
6	"	"	"	"
7	22.572	"	"	"
8	"	-34.999	"	"
9	"	"	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	16°26.6'	"
13	"	"	"	"
14	"	"	"	"
15	"	-34.998	"	"
16	"	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	"	"	"
20	"	"	"	"
21	"	"	"	"
22	"	"	16°26.7'	"
23	"	"	"	"
24	"	"	"	"
25	"	"	"	"
26	"	"	"	"
27	"	"	"	"
28	22.550	"	16°26.8'	"
29	"	"	"	"
30	"	"	"	"
31	"	"	"	"

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

GEOMAGNETIC LONGITUDE 3.3°

ORIGINAL RECORDS HELD AT:-

BRITISH ANTARCTIC SURVEY
ATMOSPHERIC SCIENCES DIVISION
MADINGLEY ROAD
CAMBRIDGE CB3 0ET

Phone (0223) 61188

1. Instruments

There are standard La Cour variometers and an L.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>		<u>Storm La Cour</u>		<u>Fluxgate</u>
H	Jan 01 - Dec 31	-1 min			Jan 01 - Dec 31,
D	Jan 01 - Jul 30	-1 min	Jan 01 - Dec 31	-1 min	-1 min.
Z	Dec 02 - Dec 31	-1 min			

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1γ/°C	+3.1γ/°C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

6. Scale Value

		H ₀ , mm	D ₀ , mm	Z ₀ , mm	T ₀ , °C
Normal La Cour	Jan 01 - May 28	4.32	0.92	3.30	0.45
	May 29 - Dec 31	4.02	0.92	3.30	0.40
Storm La Cour		15.3	2.32	-11.5	-
Fluxgate		15.1	2.17	-15.3	-

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H_T) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

- H₀ etc., baselines (at T_S = 0°C for H, Z)
- q_H, temperature coefficients
- s_H, scale values
- n_H, ordinates in mm.

$$H = H_0 + s_H n_H - q_H (T_S - (s_T n_T))$$

$$H = 22,572 + (4.32 \times 1.4) + (-3.1) \times (0 - (22.3 + (0.45 \times 27.0)))$$

$$= 22,572 + 6 + 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 + s_Z n_Z + q_Z (T_S - (T_0 + s_T n_T))$$

$$Z = -35,062 + ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 + (0.45 \times 27.6)))$$

$$= -35,062 + 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_0 + s_D n_D$$

$$D = 16^\circ 24.0' + (0.92 \times 30.8)'$$

$$= 16^\circ 52.3' \text{ East}$$

Argentine Island

November, 1976

Normal La Cour Baseline

Day	H	Z	D	I
1	22,572	-35,998	16°26.3'	18.9
2	"	-35,999	"	"
3	"	"	"	"
4	"	"	"	"
5	22,551	"	"	"
6	"	"	"	18.8
7	"	"	"	"
8	"	"	"	"
9	"	"	"	"
10	"	-35,000	"	"
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	"	18.9
16	"	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	-35,001	"	"
20	"	"	"	"
21	"	"	"	"
22	"	"	16°26.7'	"
23	"	"	"	"
24	"	"	"	"
25	"	"	"	"
26	"	"	"	"
27	"	"	"	"
28	"	"	"	"
29	"	"	"	"
30	"	"	16°26.6'	"

BRITISH ANTARCTIC SURVEY

(FORMERLY FALKLAND ISLANDS DEPENDENCIES SURVEY)

MAGNETIC RECORDS FOR 1976

FROM ARGENTINE ISLANDS A.973

LAT. $-65^{\circ} 15'$ LONG. $295^{\circ} 44'$

GEOMAGNETIC LATITUDE -53.8°

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ORIGINAL RECORDS HELD AT:-

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ARGENTINE ISLANDS A.973

EXPLANATORY NOTES, 1976

1. Instrument

The records are standard La Cour variometers and an L.D.A. Fluxgate magnetometer, all recording H, D and Z.

2. Time

The La Cour charts are usually changed at Greenwich midnight, so that each chart shows a complete Greenwich day.

Due to parallax, during the periods indicated, the following corrections should be added to time read on the traces (the relevant moving time dot being used for each of the storm La Cour traces).

	<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
H	Jan 01 - Dec 31 -1 min		Jan 01 - Dec 31.
D	Jan 01 - Jul 30 -1 min	Jan 01 - Dec 31 -1 min	-1 min.
Z	Dec 02 - Dec 31 -1 min		

3. Order of Traces

From top to bottom of chart

<u>Normal La Cour</u>	<u>Storm La Cour</u>	<u>Fluxgate</u>
T trace (when present)	Z trace	H trace
H trace	Z baseline	Time
H baseline	T trace	D trace
T trace (when present)	H trace	D baseline
D trace	H baseline	
D baseline	D trace	
Z trace	D baseline	
Z baseline		

4. Sense of Traces

- T increases up the chart
- H increased up the chart
- D increases up the chart
- Z becomes less negative down the chart.

5. Temperature Coefficients

Temperature coefficients (the ordinate, in gammas, increases with increasing temperature when the coefficient is positive) for the normal La Cour records are:-

	<u>H</u>	<u>Z</u>
Jan 01 - May 28	-3.1 γ / $^{\circ}$ C	+3.1 γ / $^{\circ}$ C
May 29 - Dec 31	-2.3	+2.9

For the storm La Cour and fluxgate records, chart baselines are given or can be deduced by comparison with the normal records. Temperature coefficients are thus not required.

	H	D	Z	T	
	mm	mm	mm	°C	
Normal La Cour	Jan 01 - May 28	4.32	0.92	2.32	0.45
	May 29 - Dec 31	4.00	0.92	2.30	0.40
Storm La Cour		15.3	2.17	-11.5	
Fluxgate		15.1	2.17	-15.8	

During storms, the fluxgate scale values are, if necessary, automatically increased ('fluxgate latches') by a factor of two.

7. Scale of Reproduction

To give scale, a ruler of 50mm. length is reproduced on each magnetogram.

8. Baselines

For each calendar month baselines are given on separate sheets. For the normal La Cour records, baselines at 0°C are quoted. Chart baselines can be calculated using the information given in Section 5. The values given for the T baseline (H₀) are valid when the T trace is below H₀. When the upper T trace is used subtract 91.7mm from the measured ordinate.

Following the installation of a new bimetal strip in the H variometer on May 28, the H and T baselines vary rapidly. From May 29 to July 31 the baseline values quoted apply to 0001Z each day. Values at other times can be found by interpolation.

For the storm La Cour and fluxgate records, chart baselines can be deduced by comparison with the normal records or are given on the monthly sheet.

9. Example of computation absolute values

01 Jan 1976, 1200 Z

H₀ etc., baselines (at T_S = 0°C for H, Z)
 q_H, temperature coefficients
 s_H, scale values
 n_H, ordinates in mm.

$$H = H_0 + s_{H H} n_{H H} + q_{H H} (T_S - (s_{T T} n_{T T}))$$

$$H = 22,572 + (4.32 \times 1.4) + (-3.1) \times (0 - (22.3 + (0.45 \times 27.0)))$$

$$= 22,572 + 6 + 107$$

$$= 22,685 \text{ gammas.}$$

$$Z = Z_0 + s_{Z Z} n_{Z Z} + q_{Z Z} (T_S - (T_0 + s_{T T} n_{T T}))$$

$$= -35,062 + ((-2.32) \times (-1.1)) + 3.1 (0 - (22.3 + (0.45 \times 27.6)))$$

$$= -35,062 + 3 - 107$$

$$= -35,166 \text{ gammas.}$$

$$D = D_0 + s_{D D} n_{D D}$$

$$= 16^{\circ}24.0' + (0.92 \times 30.8)'$$

$$= 16^{\circ}52.3' \text{ East}$$

Normal La Cour Baselines				
Day	H	Z	D	L
1	22,571	-34,946 (1700Z)	16 ^o 26.6'	18.9
2	"	-34,946	"	"
3	"	"	"	"
4	"	"	"	"
5	"	"	"	"
6	"	"	"	"
7	"	"	"	"
8	"	"	"	19.0
9	"	"	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	"	"
13	"	"	"	"
14	"	"	"	"
15	"	"	"	"
16	"	"	"	"
17	"	"	"	"
18	"	"	"	"
19	"	"	"	"
20	"	"	16 ^o 26.7'	19.1
21	"	"	"	"
22	"	"	"	"
23	"	"	"	"
24	"	"	"	"
25	"	-34,945	"	"
26	"	"	16 ^o 26.8'	"
27	"	"	"	"
28	"	-34,944	"	"
29	22,552	"	"	"
30	"	"	"	"
31	"	"	"	"

Storm La Cour Baselines

1	22,455	-34,910	16 ^o 23.2'
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