

REPRODUCED

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992

PROJECT NAME:

ARTHUR RIVER

TITLE:

1982 AEROMAGNETIC SURVEY INTERPRETATION
OF AN AREA NORTH EAST OF WARATAH

OPEN FILE

AREA NAME/S, STATE 1:250,000 SHEET NO/S & COORDINATES:

Burnie

COMMODITY/IES:

TEXT PAGES NO: 2

PLAN NOS: 2

TABLE NOS:

APPENDICES:

AUTHOR/S: D B Trussell

5th October 1982

DATE:

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AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

WARATAH AEROMAGNETIC SURVEY1. INTRODUCTION

In March 1982 Geoex carried out an airborne total magnetic field survey over an area north east of Waratah. The location is shown in figure 1. A mean terrain clearance of 225 metres was used. Flight line spacing was 200m. The magnetometer had a sensitivity of 1nT and a sample interval of 0.8 seconds.

2. PROCEDURE

The original flight path recovery was done on a photomosaic with an inaccurate scale. Metric grid points were marked on the photographs and a new plot of the flight path and contours was carried out on standard 1:100,000 map sheets. These 1:10,000 plans were used for the work described here.

Many magnetic anomalies are so close together that they do not appear as separate responses on the contour plan. For this reason and also to check the quality of the Geoex work, a detailed study was made of the original analog records. The Geoex stacked profile plans were not found to be very useful in this regard since filtering had been applied to the data before the plotting was done. This tended to degrade anomaly resolution.

All readily discernable magnetic responses were plotted at their correct position on the flight path recovery plan. An overlay with this information has been prepared and is included with this report.

3. DISCUSSION

The contour map as already noted did not accurately portray the details of the magnetic field and so was not used in the interpretation.

There is a considerable coverage of the area by basalt flows, particularly on the north and east sides of the survey area. The edge of the basalt is not readily discernable in the contour map. This implies that the thickness of the basalt is highly variable and/or its magnetic susceptibility is highly variable.

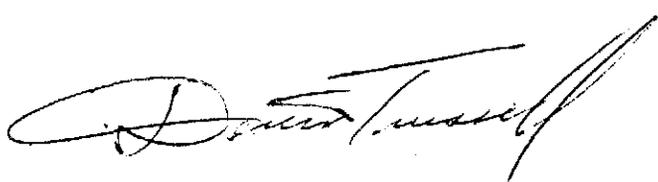
Two areas have been chosen for further investigation. These are labelled target one and target 2 on the plan. They were selected on the basis of being similar in character to the aeromagnetic response at Mt Bischoff. Target one also shows up on the Tasmanian Mines Department 1:50,000 aeromagnetic plan.

2.

There is an area of detailed geologic mapping which extends westward from target one. Here the geologic strike is in close agreement with that of nearby aeromagnetic anomalies. This would seem to indicate the magnetic influence of the basalt is relatively minor.

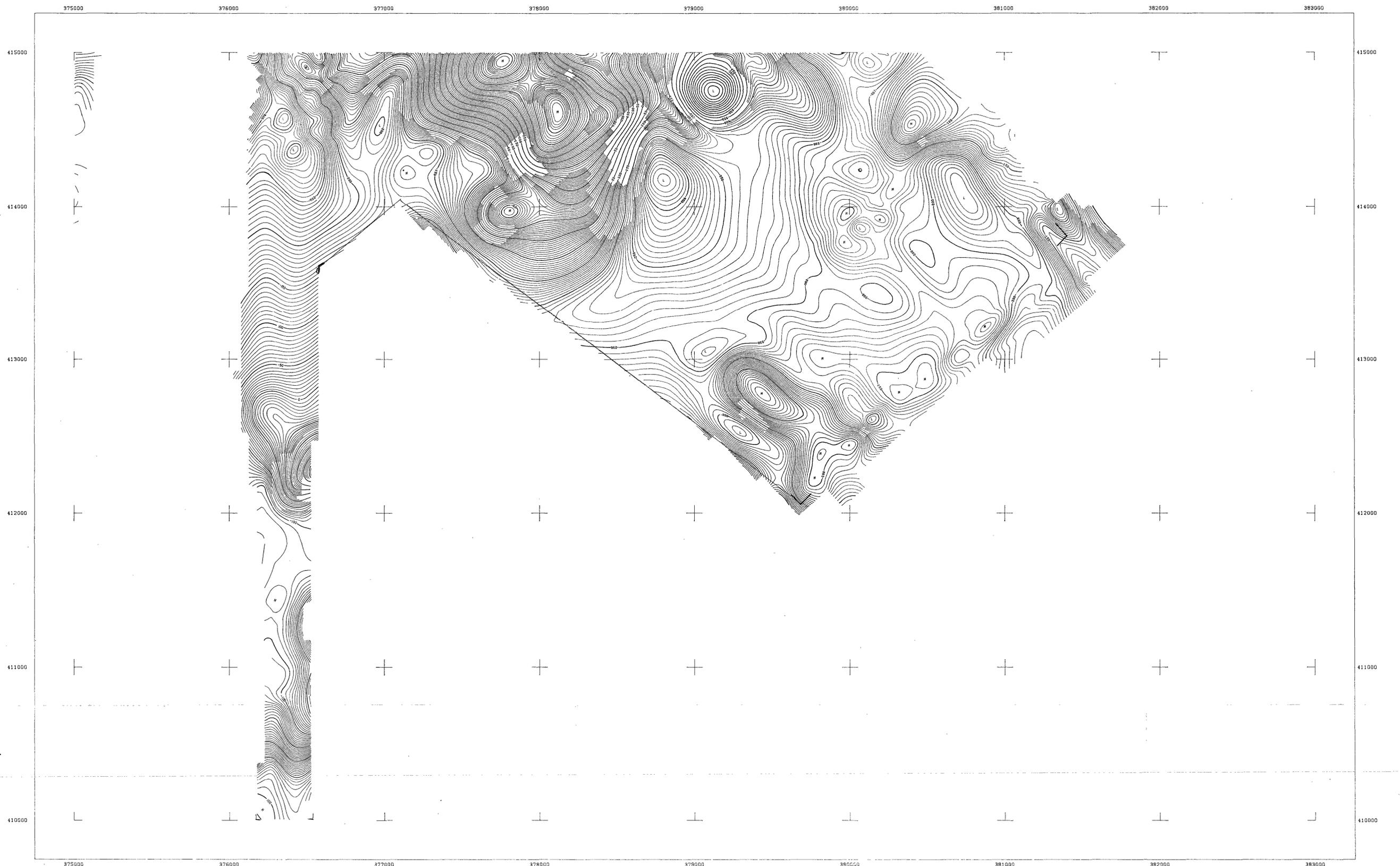
4. CONCLUSIONS

A grid should be established over target one and target two. Ground magnetic surveys and at least three lines of Pulse EM should be carried out over each grid.



D B Trussell

DBT:pmck



Airborne Geophysical Survey and Compilation by



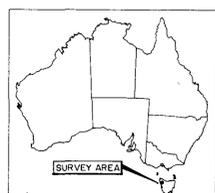
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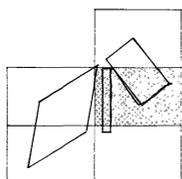
MT. BISCHOFF AREA TASMANIA

CONTOURS OF RESIDUAL TOTAL MAGNETIC INTENSITY

SCALE 1:10000



SURVEY LOCATION



SHEET INDEX

The data presented is the residual magnetic intensity, after subtracting the International Geomagnetic Reference Field from the observed Total Magnetic Intensity. The data was corrected for diurnal drift using a base station monitor at SMITHTON Airfield, Latitude 40.837 S, Longitude 145.083 E, Altitude 9 Metres. The sensor height was 3 metres. The adapted value for this location was 62174 nT. Final detailed levelling of the data was performed using tie-line crossover analysis. A simple 3 point filter was applied to the data, which was then gridded and contoured using a 50m by 50m mesh cell.

EQUIPMENT SPECIFICATIONS
Cessna 441BSE Aircraft
SONOTEK IGSS1 SYSTEM
0.1 nT MAGNETOMETER
256 CHANNEL SPECTROMETER
24 Litre Nal(Tl) DETECTOR
KING KARAO RADAR ALTIMETER
18mm Ground Tracking Camera
Industry Standard 9 track
32 RPM Magnetic Tape
8 Channel Analogue Recorder
3 Channel Analogue Recorder for Magnetometer

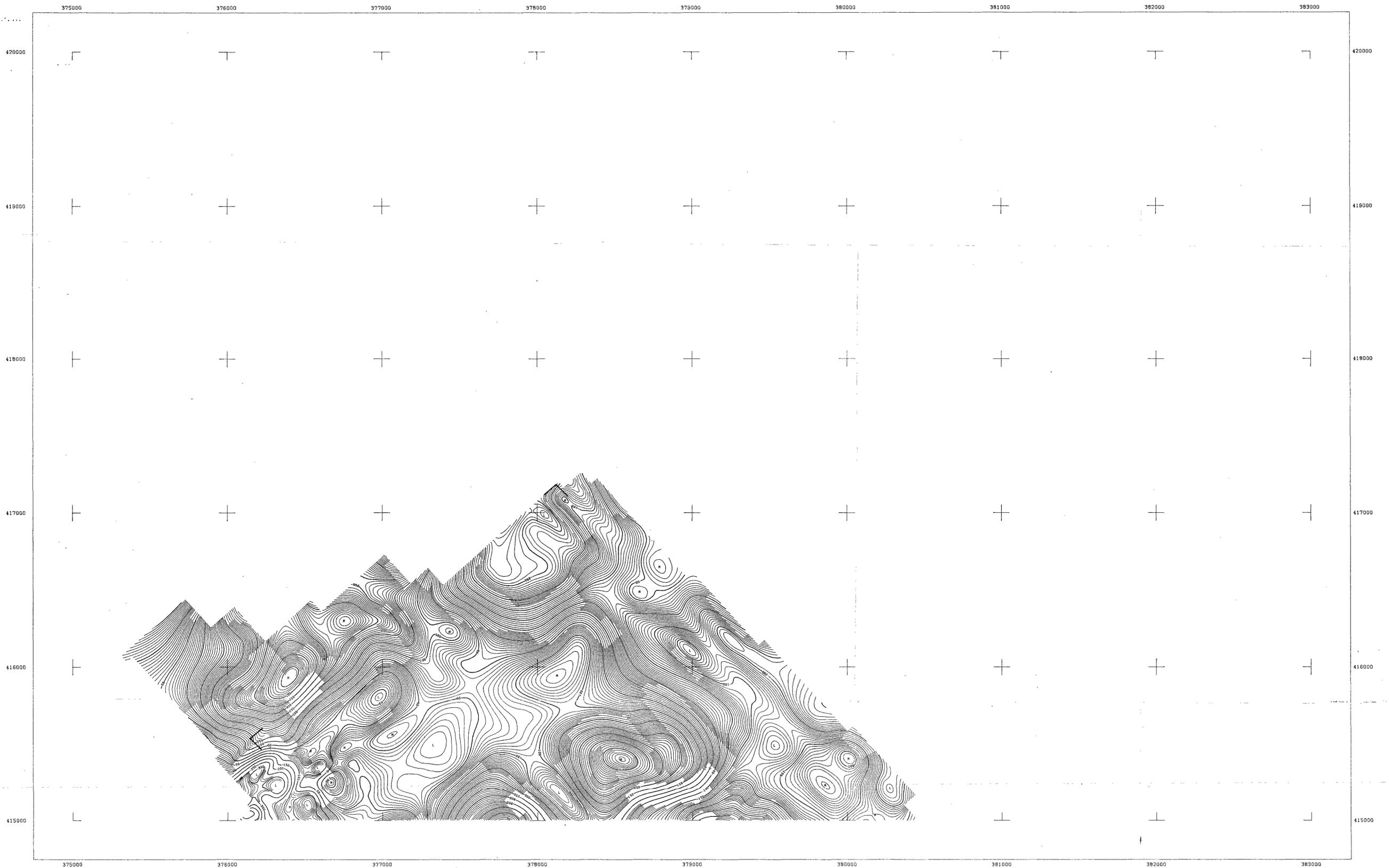
The nominal flight line separation was 150 metres, and the nominal tie-line bearing was -90 degrees. The observed mean sample interval in the flight direction was 38 metres, achieved with a nominal aircraft speed of 100 knots, and a reading interval of 0.8 seconds. The mean sensor height was 150 metres, using a towed bird configuration. The magnetometer accuracy is 1.0 nT, and the resolution 1.0 nT.

— SURVEY BOUNDARY

CONTOUR INTERVAL 5 nTesla

PROJECT NUMBER 82756 SURVEYED MARCH 1982

635004



Airborne Geophysical Survey and Compilation by



for

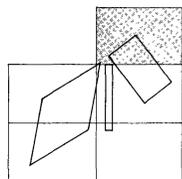
AUSTRALIAN ANGLO AMERICAN LIMITED

MT. BISCHOFF AREA TASMANIA

CONTOURS OF RESIDUAL TOTAL MAGNETIC INTENSITY

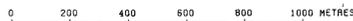


SURVEY LOCATION



SHEET INDEX

SCALE 1:10000



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 32 RPM Magnetic Tape
 8 Channel Analogue Recorder
 3 Channel Analogue Recorder
 for Magnetometer

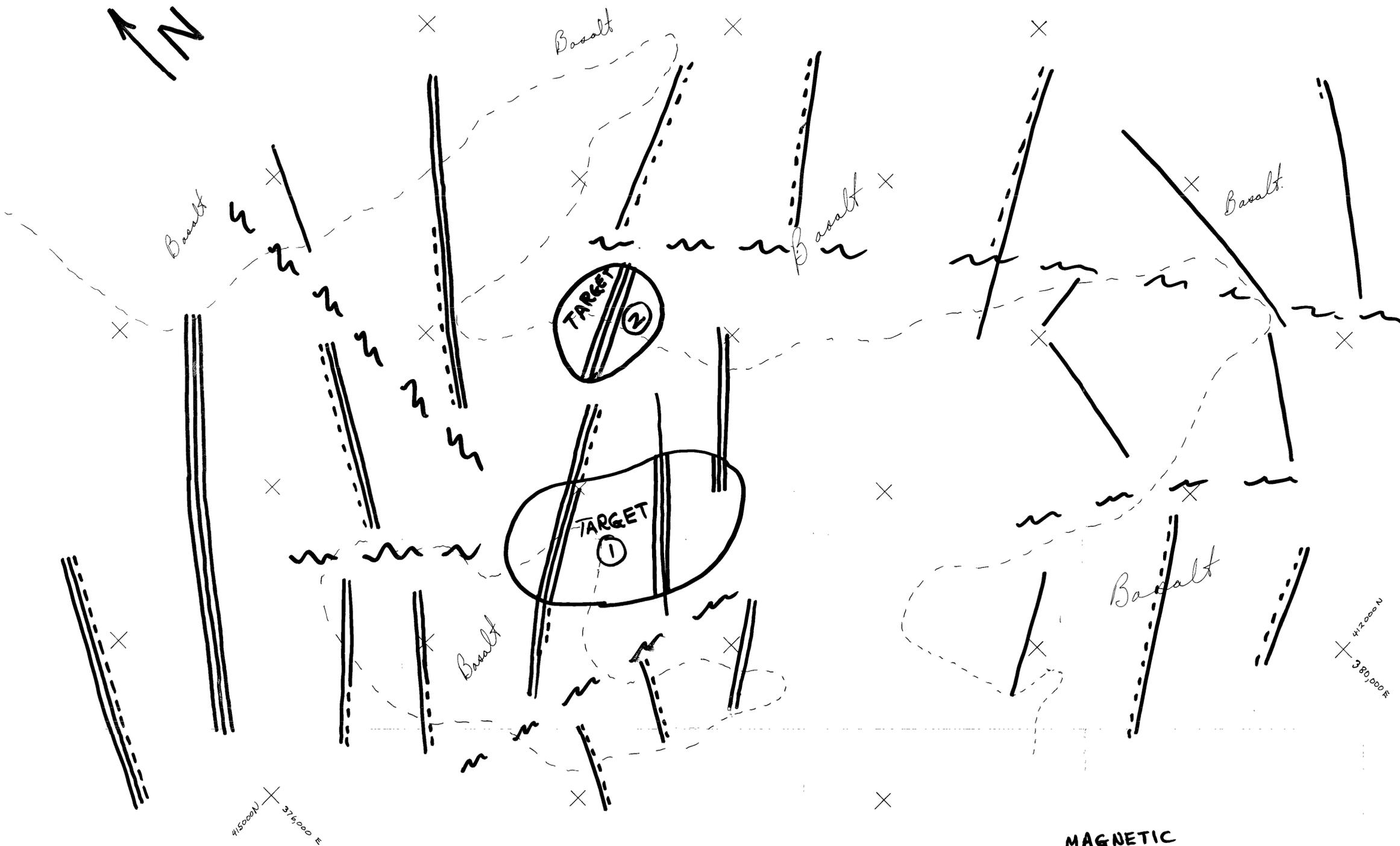
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— SURVEY BOUNDARY

CONTOUR INTERVAL 5 nTesla

PROJECT NUMBER 82756 SURVEYED MARCH 1982

635005



415,000 N
376,000 E

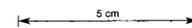
412,000 N
380,000 E

MAGNETIC ANOMALIES

- ==== 450+ nT
- 350-450 nT
- ===== 200-350 nT
- 100-200 nT
- ===== <100 nT

~ faults
--- basalt boundary

635006



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PROJECT			
AREA			
DATA	AEROMAGNETIC INTERPRETATION WARATAH NE AREA.		
COMPILED	OLS, 1982	SCALE	1:10000
DRAWN	DBT	REF No	
AMENDED			