

1957/58

Copy 3

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

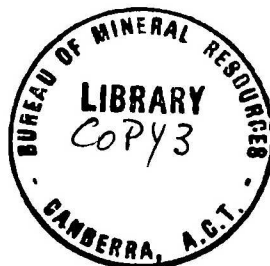
BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS.

014241

RECORDS

1957, No. 58

CARBORNE RADIOMETRIC SURVEYS IN THE DAVENPORT
RANGE AREA, N.T., 1956



by

W.J. LANGRON

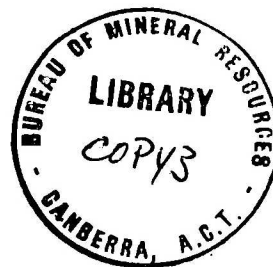
(1)

RECORDS 1957, No. 58

CARBORNE RADIOMETRIC SURVEYS IN THE DAVENPORT
RANGE AREA, N.T., 1956.

by

W.J. LANGRON



CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
2. DISCUSSION OF RESULTS	1
A. Auster Area No. 1.	1
B. Auster Area No. 2.	2
3. CONCLUSIONS	3
4. REFERENCE	4

ILLUSTRATIONS

Plate 1. Locality map.

Plate 2. Area No. 1 : location of Auster anomalies.

Plate 3. Area No. 2 : location of Auster anomalies.

1. INTRODUCTION

Several radioactive anomalies detected in the Davenport Range district by one of the Auster aircraft operated by the Bureau of Mineral Resources were examined during the period 27th September to 8th October, 1956, by a ground party using carborne radiometric equipment. A locality plan of the areas which were visited is shown on Plate 1.

The carborne party consisted of the writer and one field assistant.

The anomalies which were inspected were selected in conjunction with K. Smith, leader of the Bureau's Davenport Geological Party. It was possible to assess the value of several of the airborne anomalies from the results of regional geological mapping, but some groups of anomalies were selected for examination with the carborne equipment. K. Smith was of the opinion that most of the airborne anomalies are located in areas occupied by rocks of the Hatches Creek Group, which may be equivalent in age to the Ashburton Sandstone. Some anomalies are located in areas occupied by rocks of the Warramunga Group, but most of these anomalies had already been inspected by geologists of the Davenport party.

Because of the generally rough terrain, only one of the anomalies (No. 42) was gridded. However, the scintillation gear, which performed satisfactorily throughout the survey, was operated continuously. The programme was severely curtailed because of numerous vehicle breakdowns and not all the Auster anomalies were investigated.

The numbering of the anomalies is the same as that used in the plan showing the results of the Auster survey (Livingstone, 1957).

2. DISCUSSION OF RESULTS

A. Auster Area No. 1.

Sixteen of the anomalies inspected are in this area. Plate 2 shows the surveyed area and the position of the Auster anomalies. The anomalies which were inspected are discussed below in detail. Background count refers to the lowest readings which were registered over patches of alluvium.

Anomaly No. 28. The anomaly position is near the junction of several creeks which contain exposures of slates and other rocks of the Warramunga Group. A count rate of $1\frac{1}{2}$ x background was registered.

Anomaly No. 29. A count of $1\frac{1}{2}$ x background was obtained on the flanks of a low hill on which rocks, probably of the Warramunga Group, are exposed. The cause of the anomaly was not established. It is considered that the geological setting of both this and anomaly No. 28 warrants further inspection by the geological party.

Anomaly No. 31. A count rate of up to $1\frac{3}{4}$ x background was registered near the top and flanks of a quartzite ridge. The rocks are members of the Warramunga Group. No mineralisation was noted and the higher counts are associated with laterite.

Anomaly No. 32. A count rate of $2\frac{1}{2}$ x background was recorded near a shear zone. The highest readings are associated with rhyolites and slates of the Warramunga Group. Some quartz reefs containing hematite were observed, but no uranium minerals were found. The radioactivity of the surrounding area is generally higher than background, but the highest radioactivity is associated with the shear. This locality was recommended to the geological party for further investigation.

Anomaly No. 33. The indication is located on a ridge which runs south from Cairn's Uranium Prospect. Readings of 2 x background were registered with a P.R.M. 200 Counter. The count rate near the base of the ridge was slightly greater and isolated flakes of torbernite (mostly located in dislodged boulders) were noted. Near the dump at the Prospect, counts of up to 14 x background were registered on the carborne scintillograph.

Anomaly No. 34. A count rate of $1\frac{1}{2}$ x background was obtained over alluvium close to an exposure of slates (Warramunga Group) in a creek bed. No mineralisation was noted.

Anomalies Nos. 37 and 38. These could not be separated. The area surrounding the anomaly positions is alluvium-covered, with numerous small, angular, quartzite boulders. A count rate of up to $1\frac{1}{2}$ x background was registered, but the cause of the increased readings could not be established.

Anomaly No. 39. A count rate of up to $1\frac{1}{2}$ x background was obtained along the slopes of a ridge. The anomalous area would be much larger but for the interspersed alluvium giving background count.

Anomaly No. 40. A count rate of up to 2 x background was recorded around the base of a small hill. No mineralisation was detected, and the higher counts are associated with laterite.

Anomaly No. 41. Counts only slightly greater than background were recorded. The anomaly is located in a zone of abundant quartz shedding but its origin could not be established.

Anomaly No. 42. The anomaly is located on alluvium. An area of about half-a-mile square around the anomaly position was gridded, but a count rate only slightly greater than background was recorded. This result agrees with the size of the indication on the Auster record.

Anomaly No. 43. A count rate of $1\frac{3}{4}$ x background was registered along the ridge. No mineralisation was noted.

Anomaly No. 44. A count rate of 2 x background was registered over a sandstone ridge. Counts of slightly more than 2 x background were recorded over the southern end of the ridge, but no reason for this increase could be established.

Anomalies Nos. 45 and 46. These are situated on quartzite ridges. A count rate of up to $1\frac{1}{2}$ x background was registered along the ridges in several places, but no mineralisation was noted.

B. Auster Area No. 2.

The remaining six anomalies which were inspected are

3.

in this area. Plate 3 shows the surveyed area, which is known as Skinner's Pound, and the position of the Auster anomalies.

The Pound is a domal structure which has been intruded by basic igneous rocks; most of the radioactive anomalies occur in sandstone, near the edge of the intrusive.

Some copper-staining and carbonate mineralisation were noted within the Pound but not near the radioactive anomalies.

The anomalies lie in an area which is mostly covered by alluvium and which is slightly more elevated than the remainder of the Pound.

The anomalies are discussed below in detail.

Anomalies Nos. 47 and 48. The area surrounding these anomaly positions is slightly more radioactive than background and within this area there are several zones of up to $1\frac{1}{2}$ x background. It is assumed that anomalies 47 and 48 correspond with two of these zones.

The rock types are schists and basic igneous intrusives; many quartz veins are visible in the creek bed. The area is alluvium-covered with abundant quartz shedding.

The cause of the anomalies could not be established, but the higher counts are generally located over outcropping greywacke.

Anomalies Nos. 49, 50 and 51. These were examined as a group by the carborne equipment; a portable counter was used for measurements on the ridges. The area is covered by alluvium with abundant quartz shedding and pebbles of basic igneous rock.

Anomaly No. 49. A count rate of up to 2 x background was registered over outcropping schist.

Anomaly No. 50. A count rate slightly higher than background was registered over sandstone.

Anomaly No. 51. A count rate of $1\frac{3}{4}$ x background was registered, usually near the patches of igneous pebbles.

Anomaly No. 53. Along the foot of the ridge a count rate of up to $1\frac{1}{4}$ x background was recorded by the carborne scintillometer. Higher up the slope, the PRM 200 registered readings of 2 x background. The ridge is quartzite with a hematite (?laterite) capping. The zone of higher counts occurs over an intrusive composed of quartz and mica, but no uranium mineralisation was noted.

3. CONCLUSIONS

Twenty-two Auster anomalies were inspected. It is considered that three of the anomalies warrant further geological investigation.

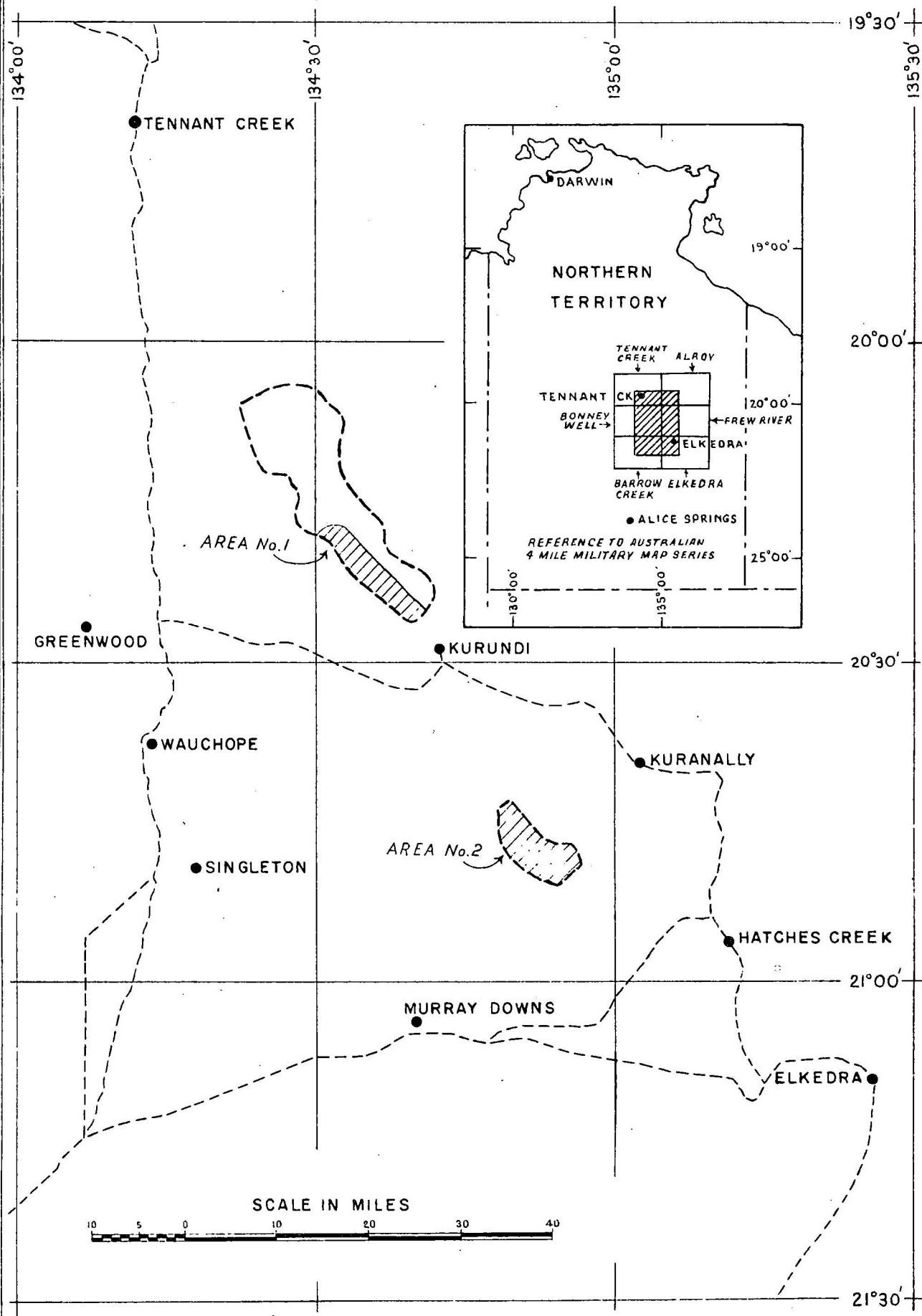
There are undoubtedly other Auster anomalies which should be investigated in the Davenport Range Area. Consideration will be given to further carborne surveys in the area


4.

when all the geological and Auster data have been plotted.

4. REFERENCE

Livingstone, D.F., 1957 - Airborne Scintillograph Survey in the Mosquito Creek Region, Northern Territory, 1956. Bur. Min. Resour. Aust. Records 1957/80.



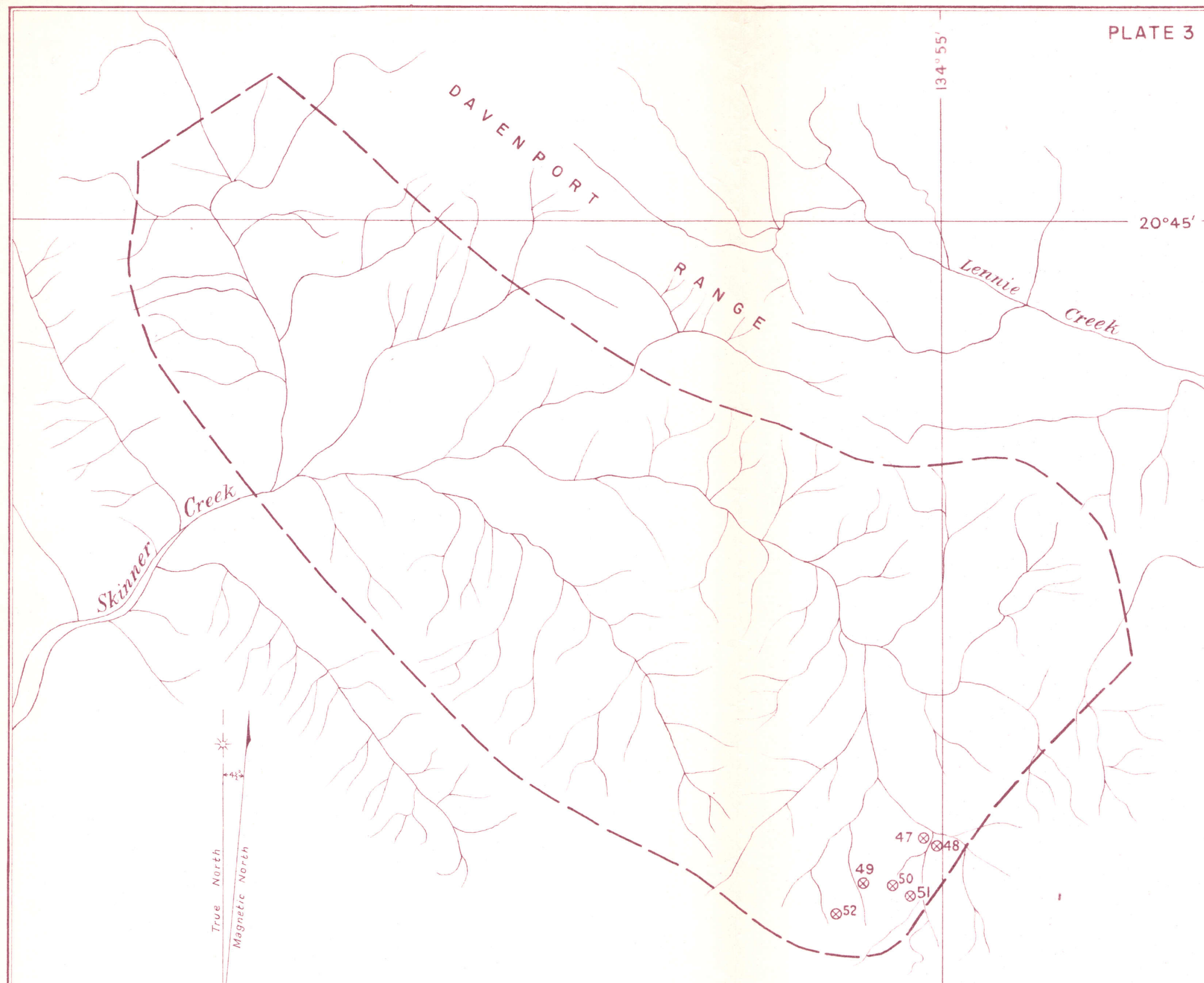
- LEGEND
-  AREAS OF CARBORNE SURVEYS
 - ROAD or TRACK
 - BOUNDARY OF AIRBORNE SURVEY, 1956

CARBORNE RADIOMETRIC SURVEYS
IN THE
DAVENPORT RANGE AREA, N.T., 1956
LOCALITY MAP

CARBORNE RADIOMETRIC SURVEYS
IN THE
DAVENPORT RANGE AREA, N.T., 1956
AREA NO.1
LOCATION OF AUSTER ANOMALIES

SCALE IN MILES
1 2 3 4 5

True North
Magnetic North
43°



CARBORNE RADIOMETRIC SURVEYS
IN THE
DAVENPORT RANGE AREA, N.T., 1956

AREA NO. 2

LOCATION OF AUSTER ANOMALIES

