

A Magnetometer Survey Of A Grid Northeast of Shoofly Village

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Abstract

The Northeast grid of the magnetometer survey conducted during the first field season at Shoofly Village was re-mapped. The results provided data for an area of promising future sub-surface examination outside the compound wall of the village.

Introduction

The data recovery plan for the first season at Shoofly Village called for a magnetometer survey of three areas. The first area was located to the northeast of the site just outside the main compound wall of the village. It was chosen primarily for the surface remains which probably indicate a structure of several rooms. However, due to the unfamiliarity of magnetometer surveying procedures the data generated from this grid could not be analyzed with accuracy and was not included in the initial report. This grid was remapped following the end of the first field season at Shoofly Village.

Methods

As with the earlier survey a Geometrics Model G-826 Portable Proton Magnetometer was used. The original grid 30 meters on a side, with the axes oriented north-south and east-west was restaked. Readings were again taken at two meter intervals on rows spaced two meters apart. At every two meter interval on the grid three readings were taken, the average of which was finally recorded with a total of 256 plotted recordings. The individual rows were transected from south to north. The data recovery team consisted of Paul H. King

and myself.

A "neutral zone" was established in order to monitor instrument drift and was located approximately 10 meters from the southwest corner of the grid. Throughout the readings the magnetometer sensor was attached to a 1.90 meter (6 foot) pole which allowed for more consistent and hence more reliable readings.

Once back in the lab the base average values for a given row were determined by averaging the base average values taken in the neutral zone at the beginning and end of each row. The base average figure was then subtracted from the observed readings along the row to determine an adjusted reading. These adjusted readings were plotted as a new grid and a contour map constructed (Figure 1).

Interpretations and Conclusions

Unlike the constructed contour maps for grids two and three which utilized numbers that diverged greatly from a modal value, the northeast grid contour map plotted positive and negative values. Positive areas are indicated in blue with negative values outlined in red. In addition, the proximity of larger to smaller readings allowed for the construction of contour intervals for both positive and negative readings in certain areas.

The sudden change in polarity in the magnetic field, indicated by adjacent areas of positive and negative values are interpreted as anomalous and indicated by black lines. The contoured areas both positive, negative and areas combining both are also considered anomalous.

The interpretation of these anomalous areas are of course open to question. The southwest corner of the grid indicated on the map by contour intervals of several concen

GRID 1 : NE CORNER

BEGINNING
BASE READING
50943

Observed - Avg. Baseline = Adjusted

| 955 | 954 | 951 | 946 | 943 | 940 | 937 | 934 | 933 | 936 | 940 | 944 | 946 | 946 | 948 | 946 | Average Baseline for entire row | Actual Baseline at end of row |
|-----|-----|------|------|-----|-----|-------|-------|-------|------|------|------|------|------|------|------|---------------------------------|-------------------------------|
| 952 | 949 | 947 | 944 | 941 | 939 | 935 | 932 | 933 | 938 | 941 | 947 | 945 | 946 | 949 | 943 | 0927 | |
| 33 | 948 | 952 | 942 | 939 | 943 | 937 | 939 | 937 | 0917 | 0922 | 0931 | 0941 | 0933 | 0930 | 0932 | 0931 | |
| 32 | 952 | 953 | 946 | 943 | 908 | 949 | 919 | 919 | 0931 | 0935 | 0946 | 0942 | 0935 | 0930 | 0929 | 0936 | |
| 31 | 951 | 958 | 943 | 943 | 901 | 896 | 924 | 930 | 0933 | 0935 | 0950 | 0959 | 0898 | 0927 | 0915 | 0930 | |
| 30 | 943 | 960 | 945 | 937 | 936 | 915 | 934 | 930 | 0933 | 0936 | 0936 | 0929 | 0913 | 0927 | 0930 | 0930 | |
| 29 | 938 | 952 | 943 | 938 | 944 | 934 | 932 | 927 | 0926 | 0926 | 0933 | 0926 | 0928 | 0931 | 0929 | 0938 | |
| 28 | 944 | 953 | 938 | 932 | 935 | 933 | 933 | 927 | 0934 | 0951 | 0920 | 0938 | 0932 | 0933 | 0930 | 0935 | |
| 27 | 939 | 953 | 934 | 923 | 936 | 931 | 929 | 925 | 0925 | 0914 | 0925 | 0935 | 0931 | 0933 | 0937 | 0930 | |
| 26 | 941 | 948 | 935 | 941 | 939 | 932 | 925 | 927 | 0921 | 0919 | 0926 | 0931 | 0946 | 0948 | 0933 | 0929 | |
| 25 | 938 | 942 | 938 | 941 | 934 | 930 | 918 | 913 | 0917 | 0926 | 0935 | 0927 | 0923 | 0939 | 0935 | 0930 | |
| 24 | 946 | 947 | 932 | 936 | 929 | 933 | 920 | 923 | 0925 | 0922 | 0924 | 0926 | 0925 | 0956 | 0930 | 0939 | |
| 23 | 940 | *947 | 931 | 926 | 938 | 940 | 920 | 960 | 0929 | 0917 | 0922 | 0933 | 0924 | 0928 | 0926 | 0925 | |
| 22 | 971 | 945 | 923 | 927 | 919 | 907 | 5092 | 970 | 0940 | 0915 | 0906 | 0921 | 0928 | 0931 | 0935 | 0932 | |
| 21 | 950 | 948 | 956 | 950 | 921 | 50894 | 50940 | 0914 | 0911 | 0917 | 0929 | 0920 | 0928 | 0928 | 0938 | 0934 | |
| 20 | 935 | 941 | 952 | 935 | 963 | 965 | 50766 | 0915 | 0919 | 0921 | 0933 | 0922 | 0943 | 0936 | 0937 | | |
| 19 | 936 | 952 | 1029 | 963 | 944 | 916 | 50874 | 0918 | 0919 | 0926 | 0938 | 0950 | 0927 | 0930 | 0936 | | |
| 18 | 972 | 962 | 970 | 961 | 935 | 50920 | 50958 | 09127 | 0919 | 0928 | 0935 | 0929 | 0946 | 0931 | 0938 | 30 | |
| 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 8 | 20 | 22 | 24 | 26 | 28 | 30 | | |

* blank readings

↑
N



GRID 1: NE CORNER



ADJUSTED READINGS

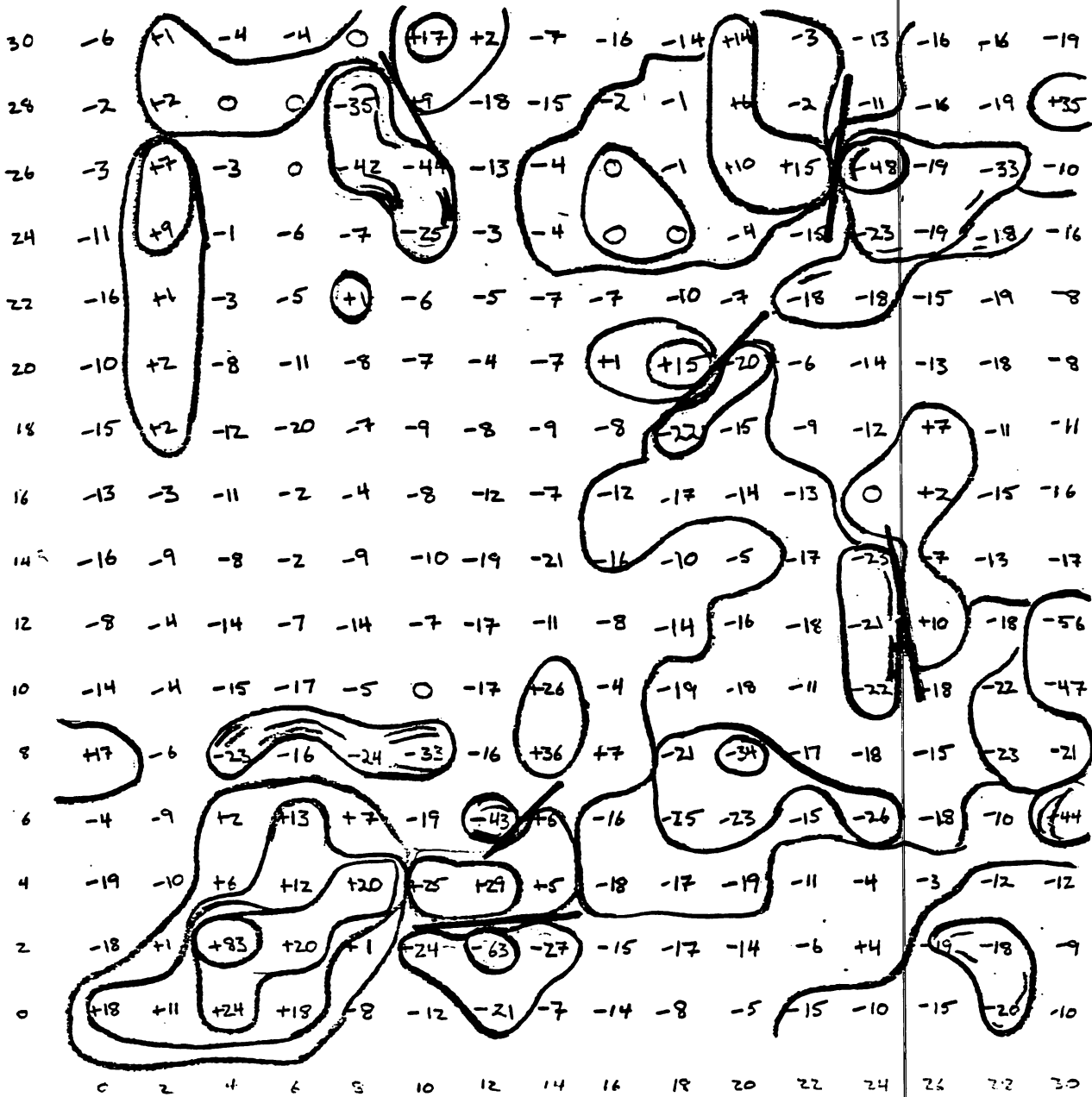


Figure 1

blobs is indicative of a noticeable surface rise visible in this area. This is interpreted as a house mound of several rooms. The adjacent areas of both positive and negative areas in close proximity to one another may indicate subsurface walls or perhaps burned rooms. The negative contours that are present in the east and southeast portions of the grid may denote burned areas. There is little on the surface from which to postulate what these anomalies may represent. The northern portion of the grid also has many contours of interest but little on the surface to indicate possible past areas of activity. The concentric-like contour intervals however may suggest burned structures, cremations, hearths, kilns or grimy activity areas away from the village, either Shoo-fly or the roomblock indicated in the southwest portion of the grid.

In conclusion, this contoured grid map provides many areas for future investigations although we cannot provide ready interpretations of what is present or what may be found. Because of the sudden change in polarity in certain areas, indicated by black lines, we feel that they represent the most fruitful areas for future excavations. Areas of concentric blobs of positive, negative or of both reading may also provide results. Isolated readings may indicate hearths, cremations or spurious magnetic anomalies. For most of these subsurface anomalies there are no surface indications, particularly for the larger amorphous ones, of what they may mean. Only trenching or individual test units will confirm whether this contour map is accurate in plotting subsurface anomalies.