

**WEEK 3 FRONTIER COMMUNITIES:**  
LIFE IN THE NORTHERN FRONTIER LATE 1ST-EARLY 3RD  
CENTURY  
EXPLORING MAGNETOMETRY

Archaeologists use a number of methods and types of information to interpret sites, and this exercise provides an excellent example of this type of work, adding all this information to one map in interactive layers.

You can explore this facility yourself.

**The Controls**

The base map is of a satellite image, and this can be examined using the zoom tool in the upper left-hand corner, or the wheel on your mouse. You can also pan across the image.



In the upper righthand corner are two buttons – greyscale and interpretation – and below these is a slider that will allow you to adjust the transparency of either overly. Full transparency when the button is all the way to the left, and no transparency when the button if all the way to the right.

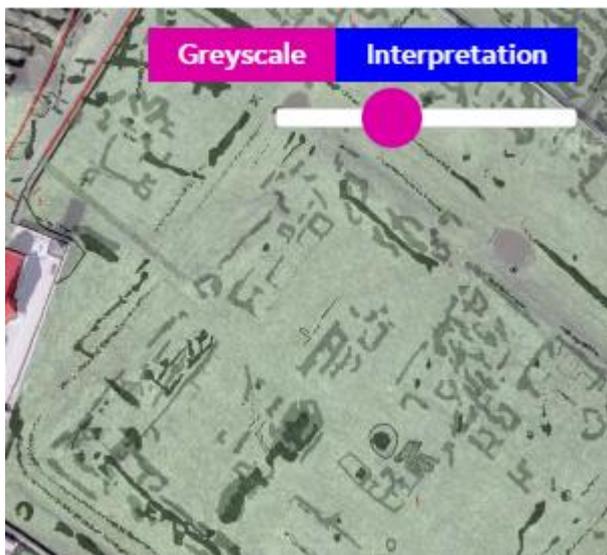
## Greyscale

Pressing the greyscale button overlays the geophysical survey onto the aerial photograph, showing you the location of archaeological features under the ground surface relative to the 'real world'. You can zoom in and out, and increase or decrease the transparency of the geophysical survey.



## Interpretation

Pressing the interpretation button replaces the geophysical survey with a drawing that is the interpretation of the features revealed by the geophysical survey. Using this, you can distinguish between ditches and banks or walls.



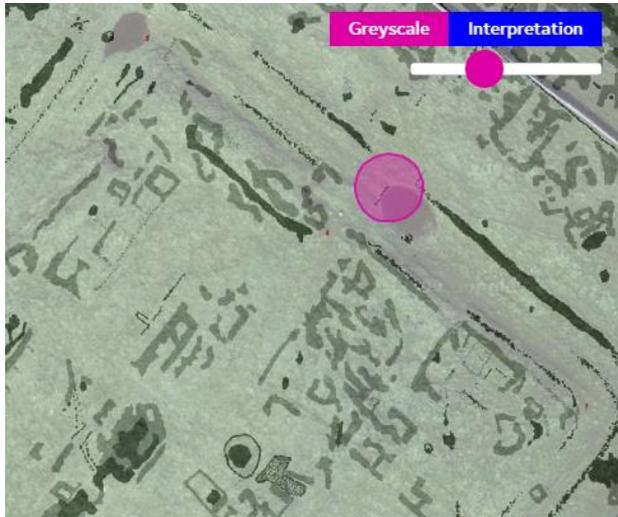
## Explore the map

Now, let's do some interpretation.

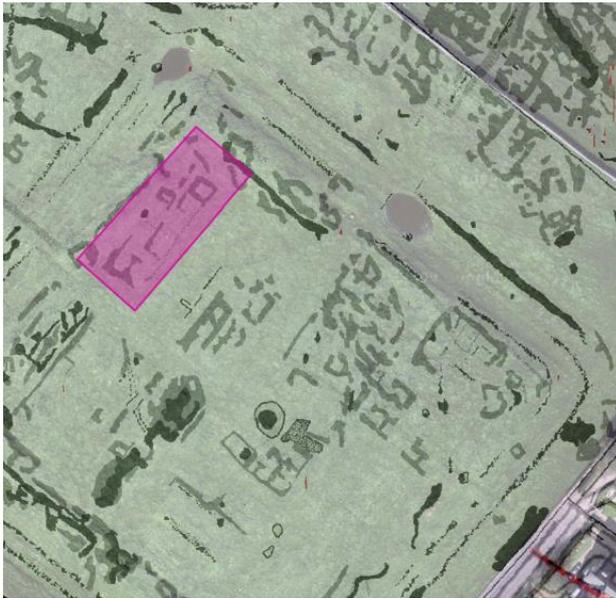
- Click on greyscale, and locate the slider all the way to the left on full transparency. Can you see any archaeological features? The rectangular shape of the fort is visible, but very little of the extra-mural settlement can be seen.

- Move the slider to about its halfway position, perhaps slightly less, and now you can see the overall size of the settlement inside and outside the fort walls relative to the modern landscape.
- Now zoom in to an area for a closer inspection, and then move the slider to the right to reduce transparency. You will see that while some of the lines revealed by geophysical survey are still very visible and clear, many of the features become less distinct.
- Staying at the same zoom and transparency, click on interpretation. This should help to reduce the 'fuzziness' or noise of the geophysical survey by indicating the results that relate to structures, mostly roads, walls, and ditches. Remember, though, this drawing is an interpretation of the geophysical survey results, and a different surveyor may be more or less confident in their interpretation of some of the features.
- Zoom out a bit and hopefully the interpretation will resolve into a pattern that is easier to understand. The black outlines ditches, which often form boundaries between plots of land, while the grey shows the outlines of buildings and other structures. Black blobs are pits or holes.

Sometimes, a lack of indication is also useful. For example, look at the fort. The break in the ditches and banks here shows the location of a gate.



The squarish blocks in a rectangle, here, indicate the presence of a barrack.



To the southeast of the fort is a native settlement.

Press the 'Iron Age settlement' button to the right of the screen if you need help locating this feature.



Sometimes, though, geophysics does not always reveal clear results. Click the 'Temple' button to the right of the screen to locate the Roman temples that were discussed in week 4. The location of the temples was known from previous excavation, but note that the general shape or outline of the temple is not seen in the geophysical survey or interpretation plot!

While there is no substitute for excavation, the layering and interrogation of evidence in this form is significant when it comes to interpreting a site without or before putting a spade in the ground.

### Now it's your turn

- Can you locate the *principia* of the fort?
- Can you spot evidence of a well?
- How was land in the extra-mural settlements organised?

Share your findings and discuss features in the comments. You can use the Map Coordinates to point course participants to particular items.

#### Map Coordinates

54.720591, -3.495171