

Lecture 2

INTRODUCTION TO THE ARCHAEOLOGICAL SITE OF ITURISSA

by Ekhine Garcia Garcia



The site

Located in a natural pass in the western part of the Pyrenees

Discovered in the context of a larger project

Related to a roman road

Investigated mainly with geophysics

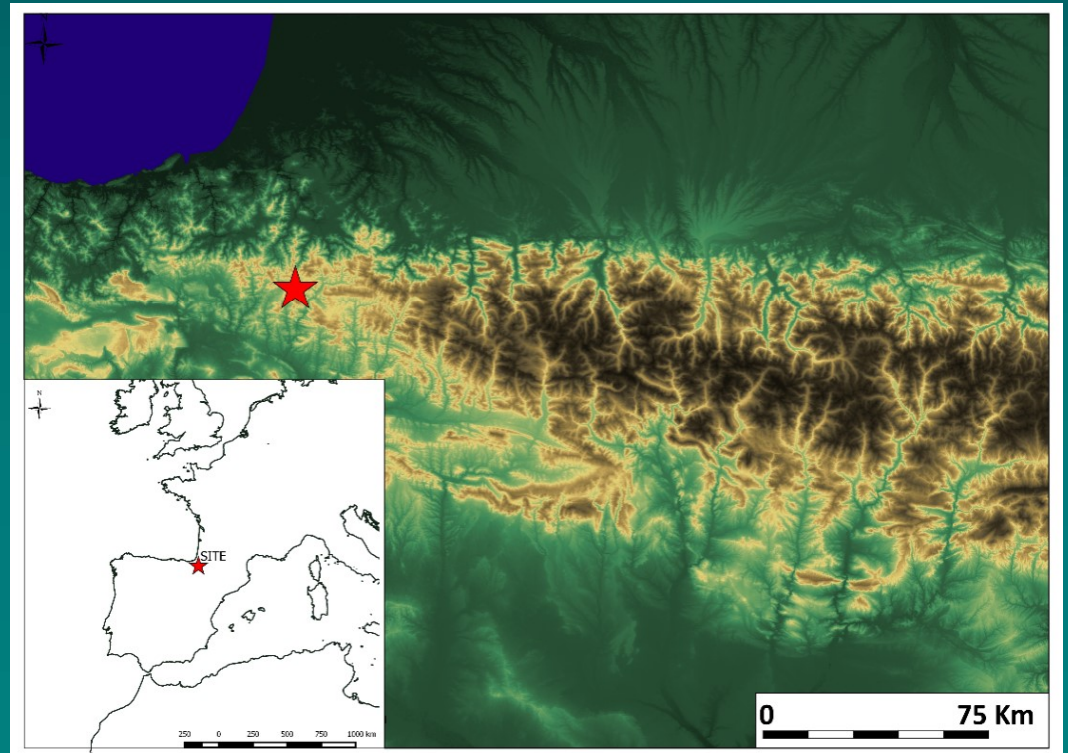
2012 Archaeological trenches

2013 Magnetic survey

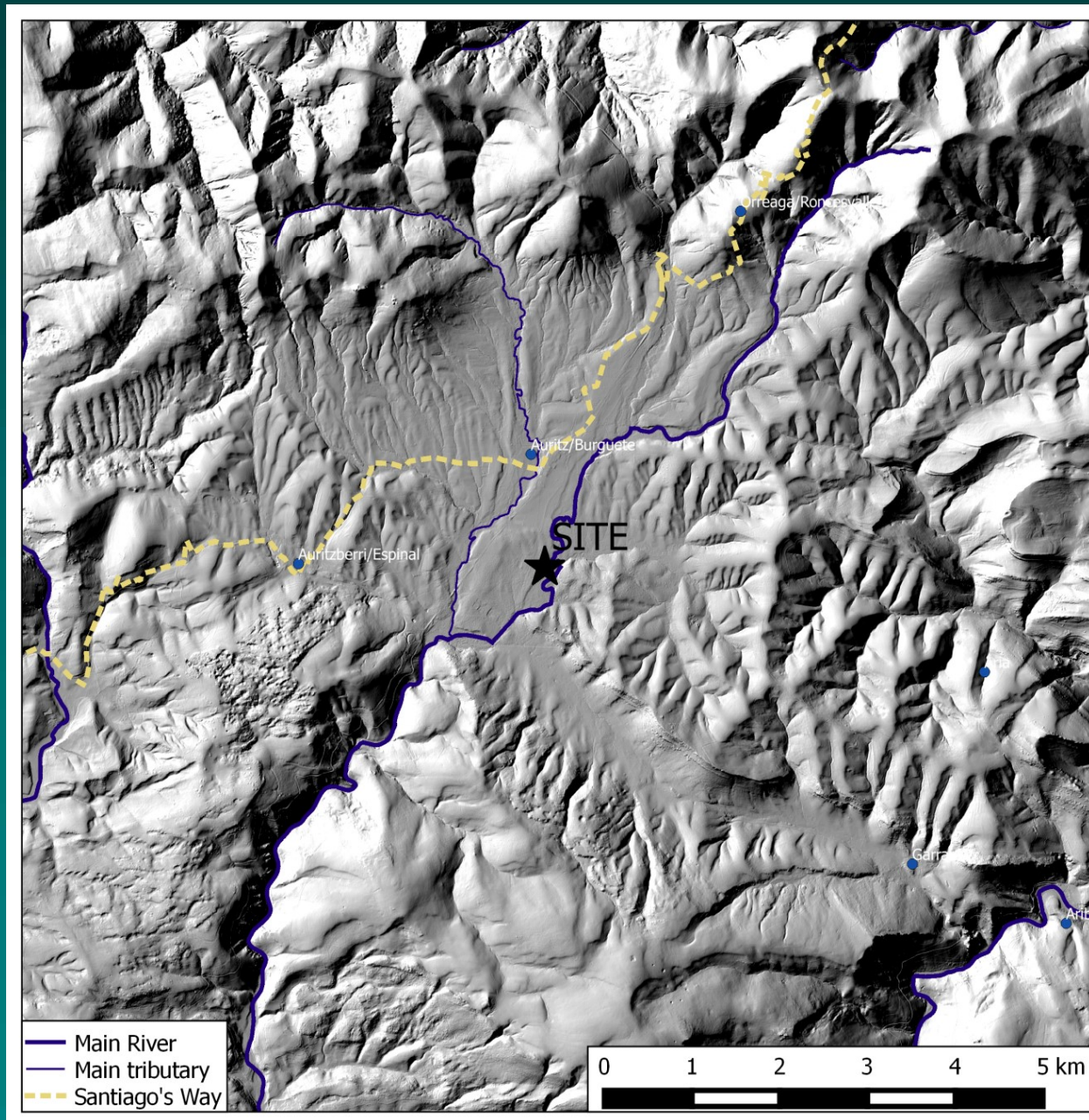
2014 Core survey

2015 GPR / RES surveys

2015-2019 Excavations

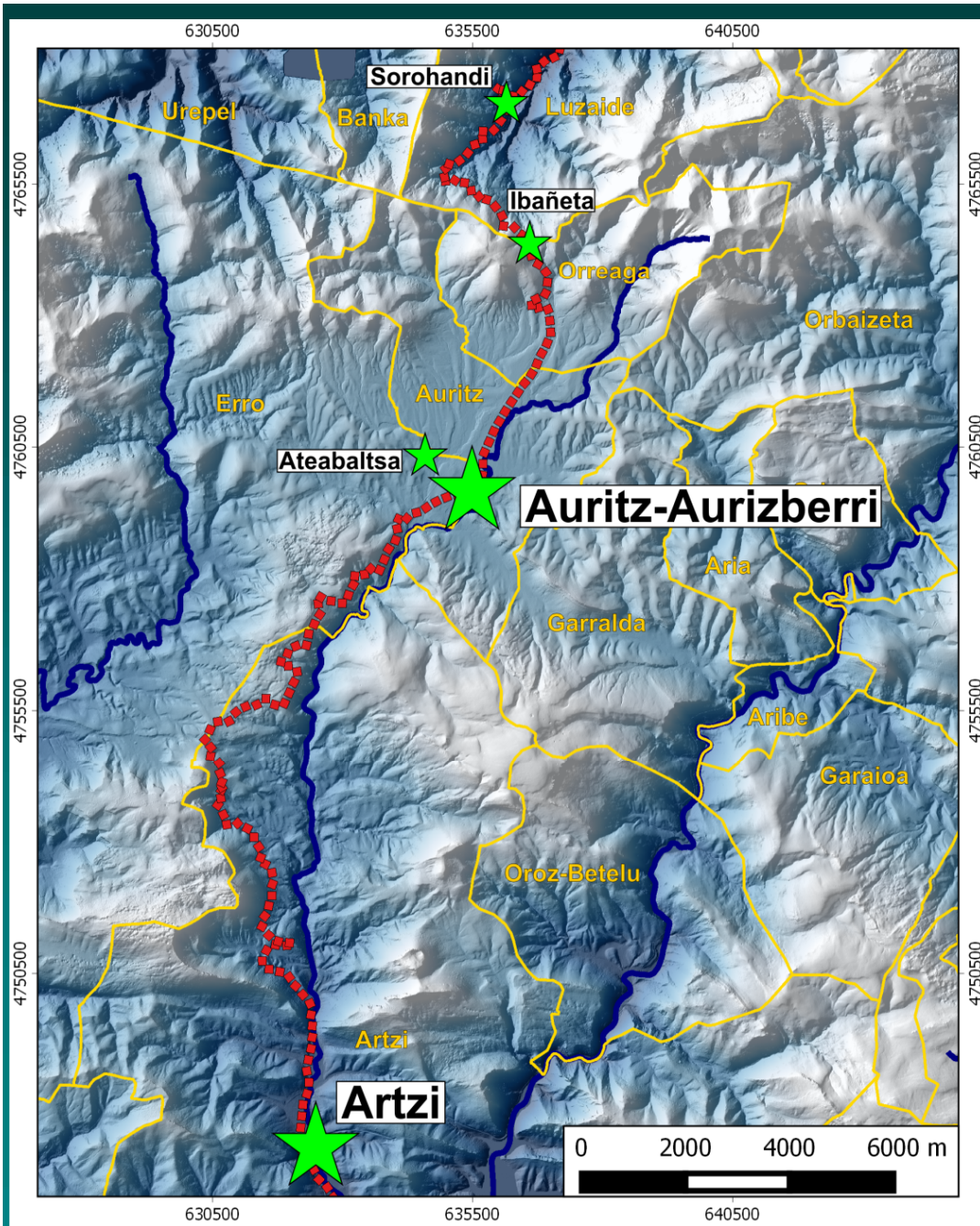


The context

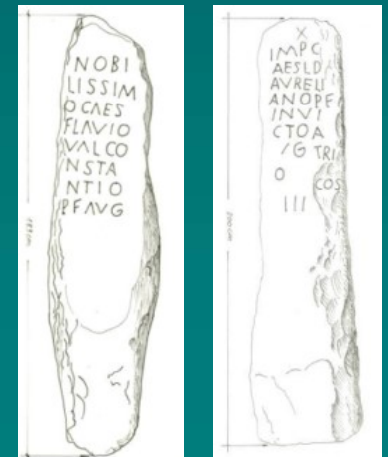


LiDAR

The context

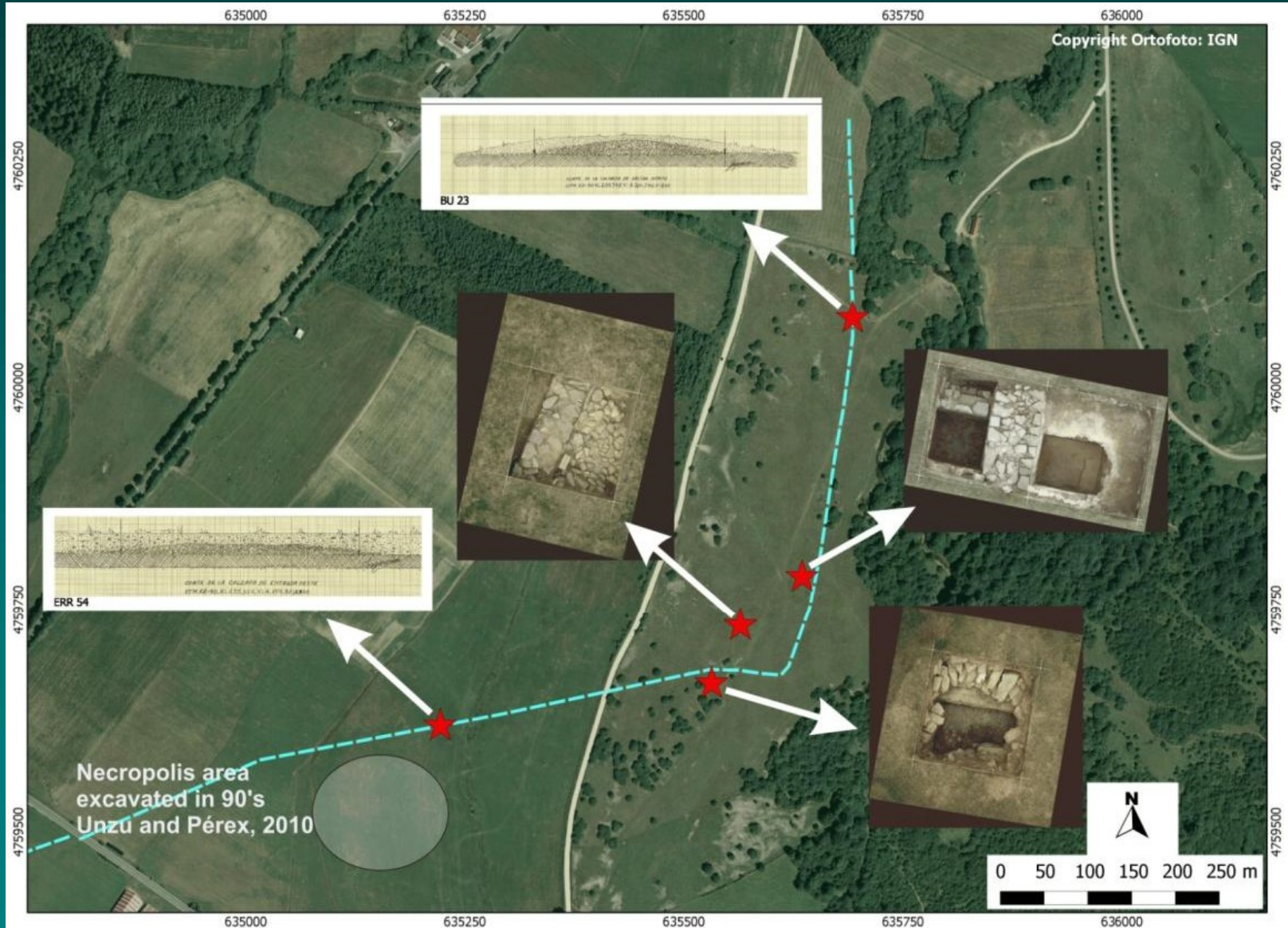


Milestones



The context

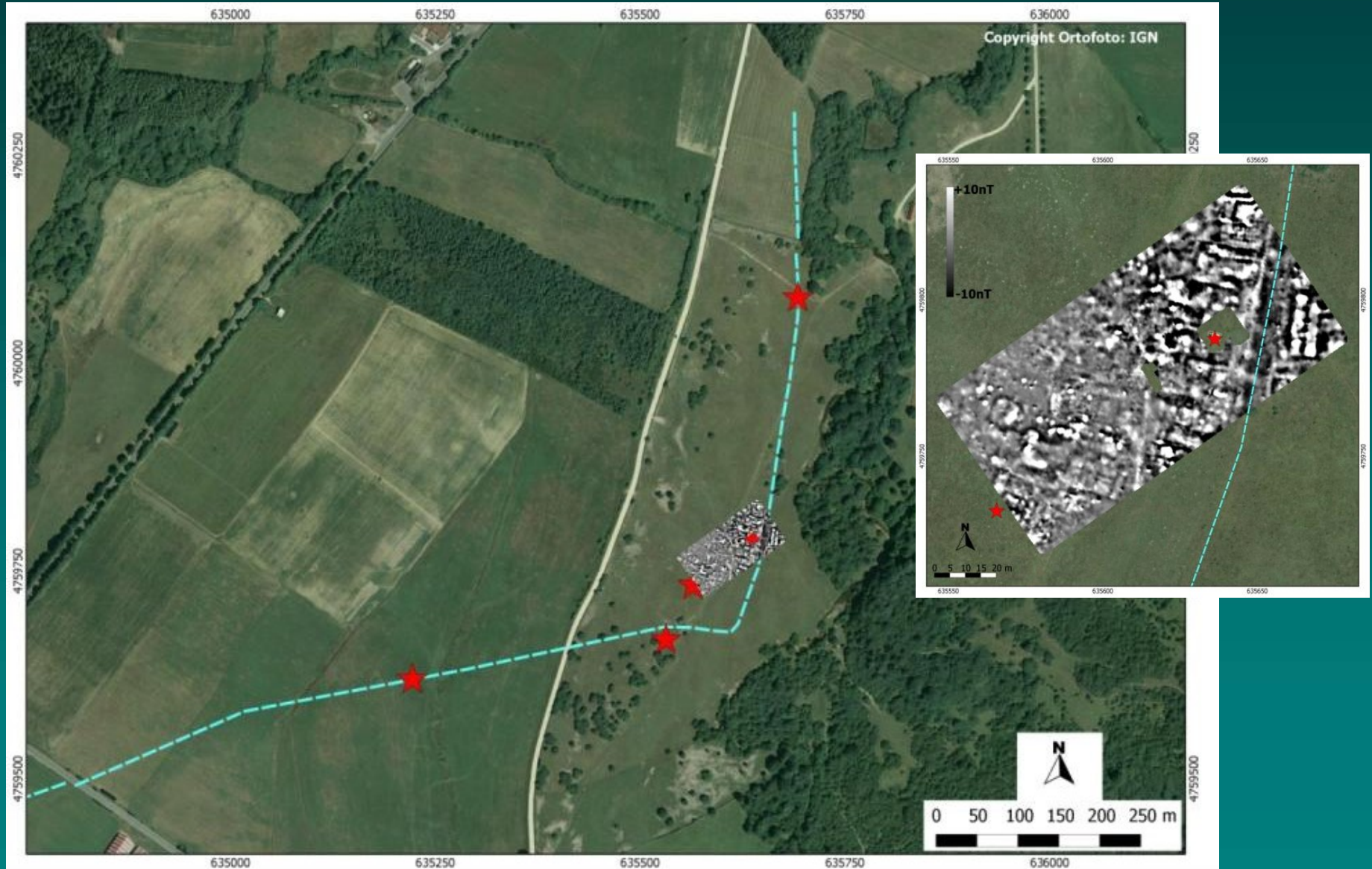
2012



Archaeological pits

The Magnetic survey

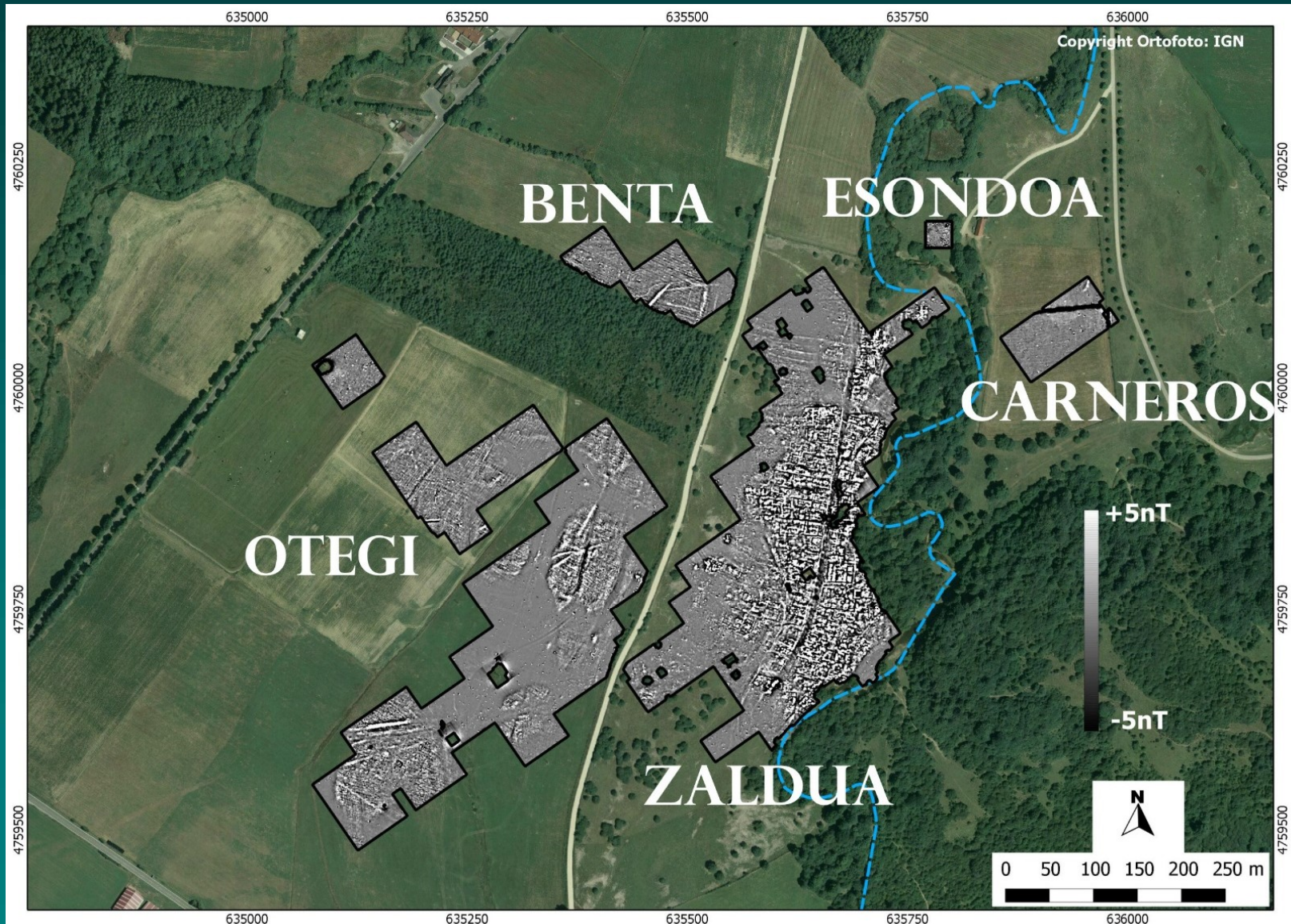
2012



Gradiometer response on 60mx120m test area. Bartington Grad 601dual. 0.25m x 0.5m spatial resolution

2013

Bartington Grad 601-dual fluxgate gradiometer. 18ha at 0.25 x 0.5m resolution. Processed data.



Garcia-Garcia et al. 2016. Magnetometer Survey at the Newly-discovered Roman City of Auritz/Burguete (Navarre). Results and Preliminary Archaeological Interpretation. *Archaeological Prospection* 23(4): 243-256.

Magnetic

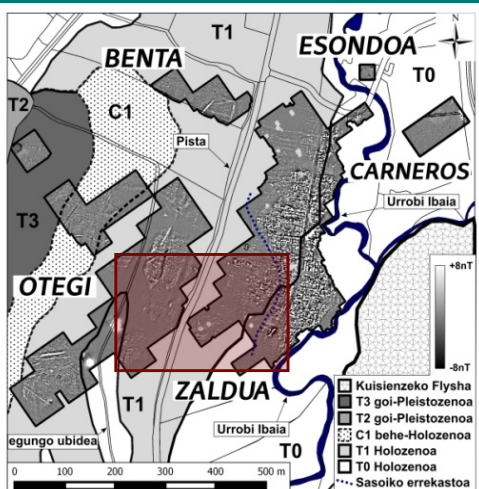
In the main area (circa 4.5 Ha)

- * Good magnetic contrast
- * Organized along the road
- * No clear limits



Magnetic

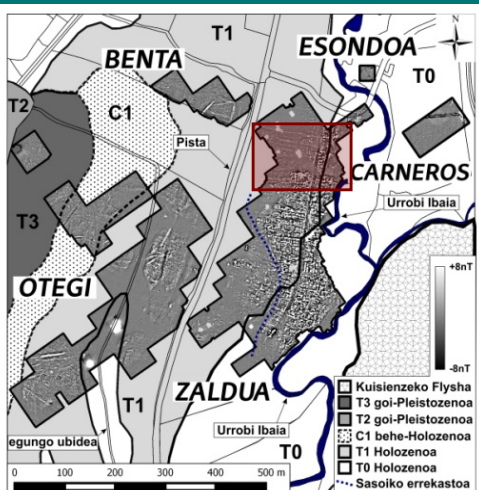
Other areas with poor magnetic contrast



Bartington Grad 601-dual fluxgate gradiometer. Processed data. -7n (black) /+9nT (white)

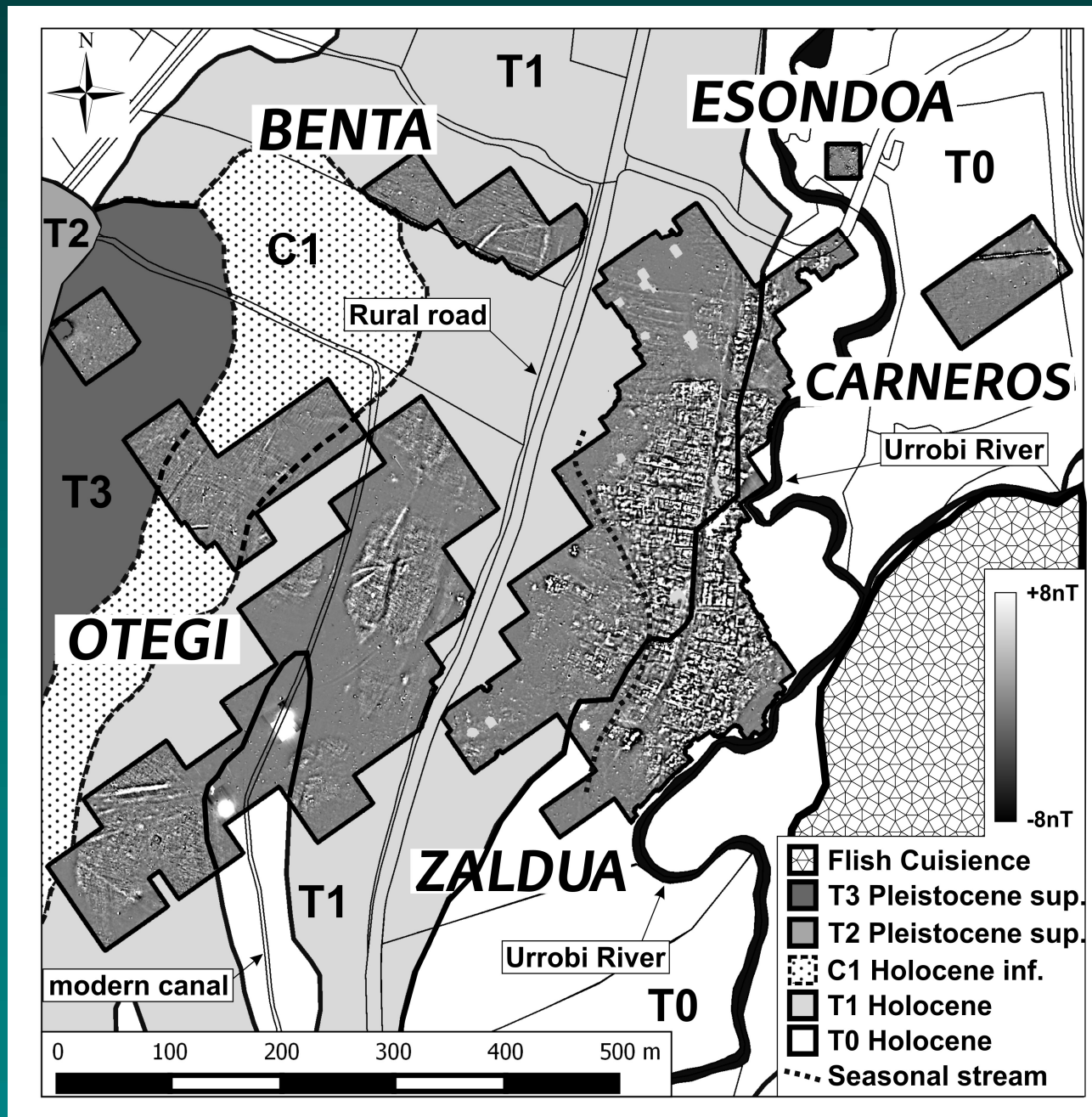
Magnetic

A possible limit in the north

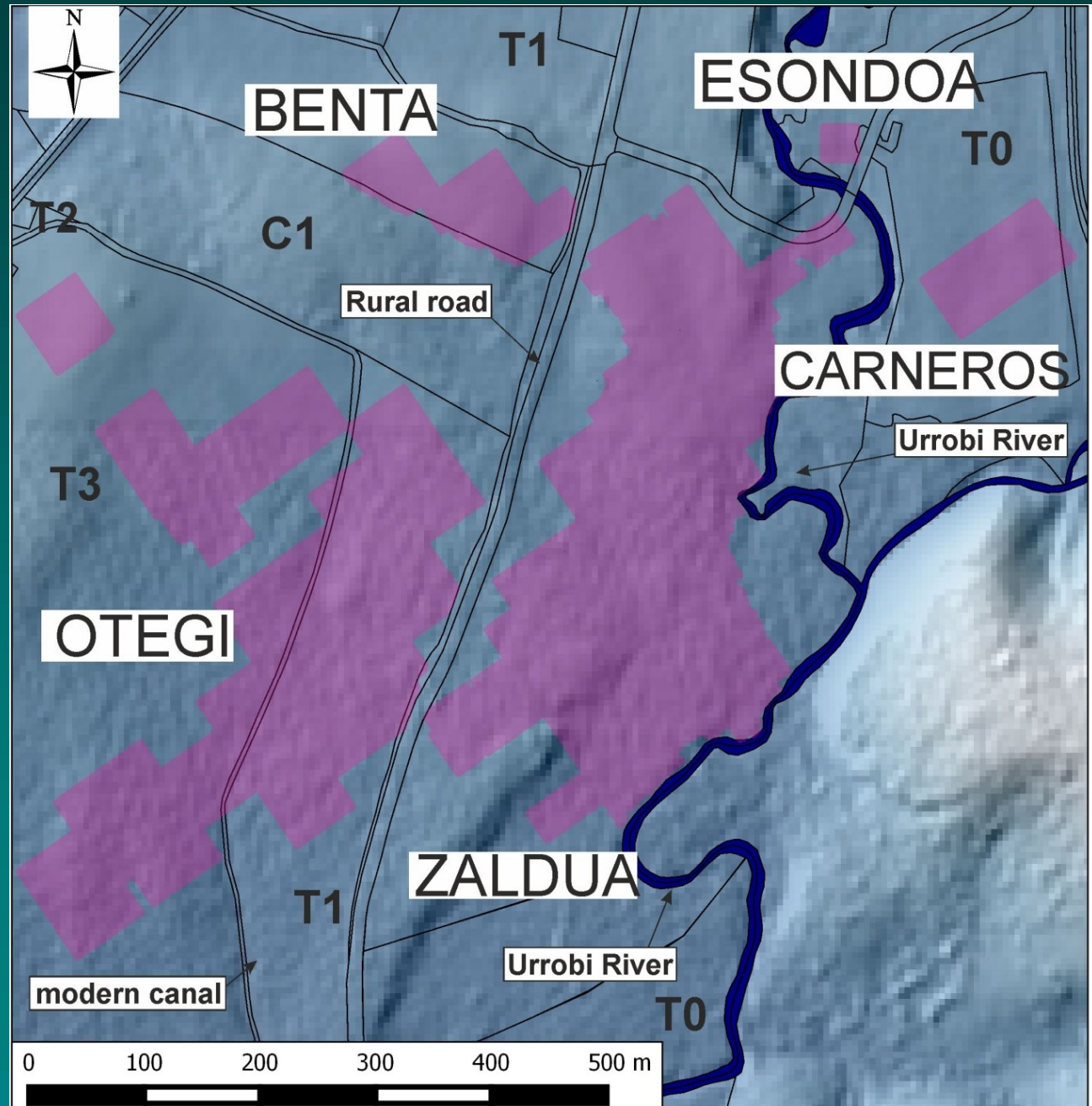


Bartington Grad 601-dual fluxgate gradiometer. Processed data. -7n (black) /+9nT (white)

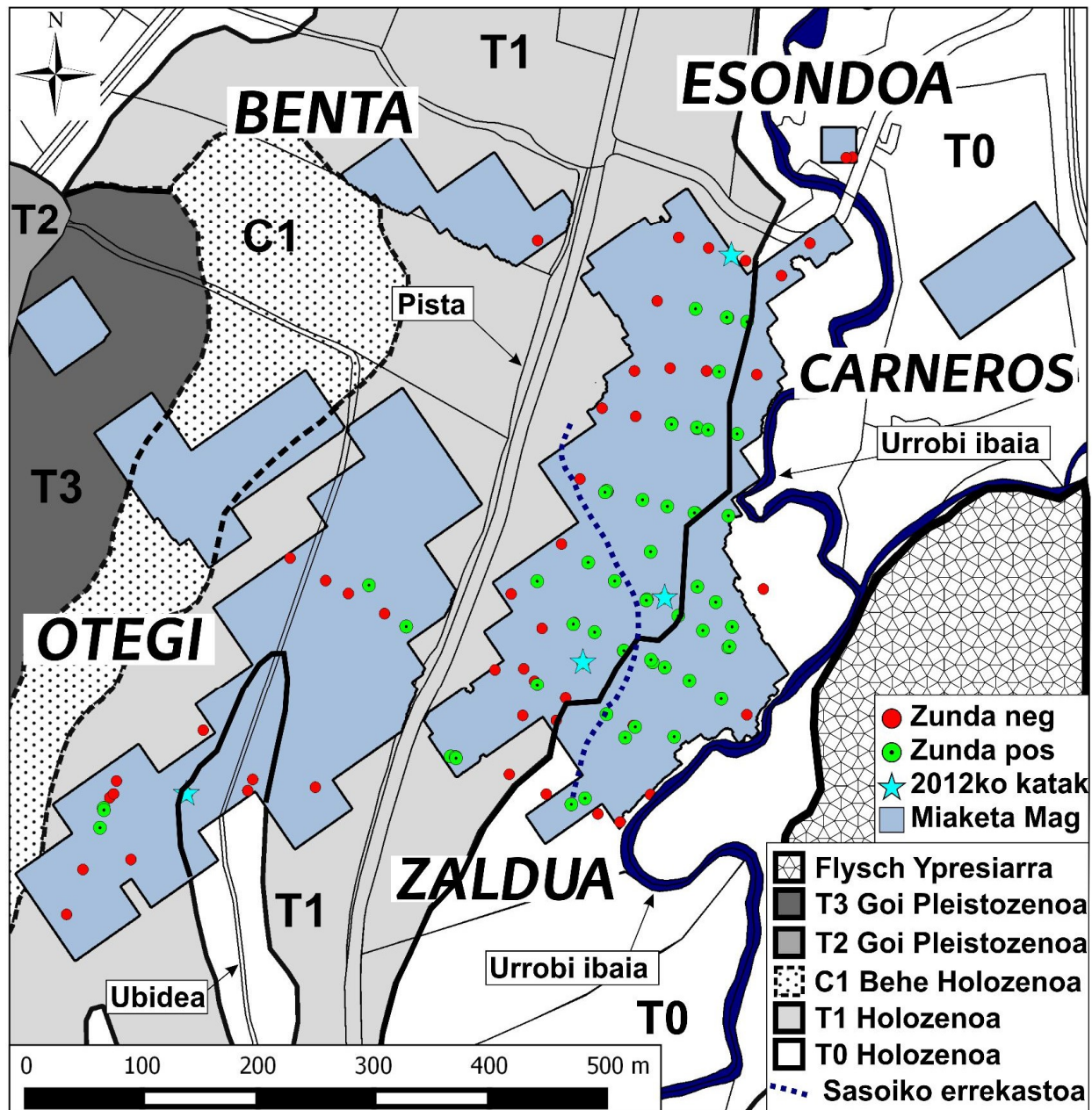
Geology



Geology



Geoarchaeological survey

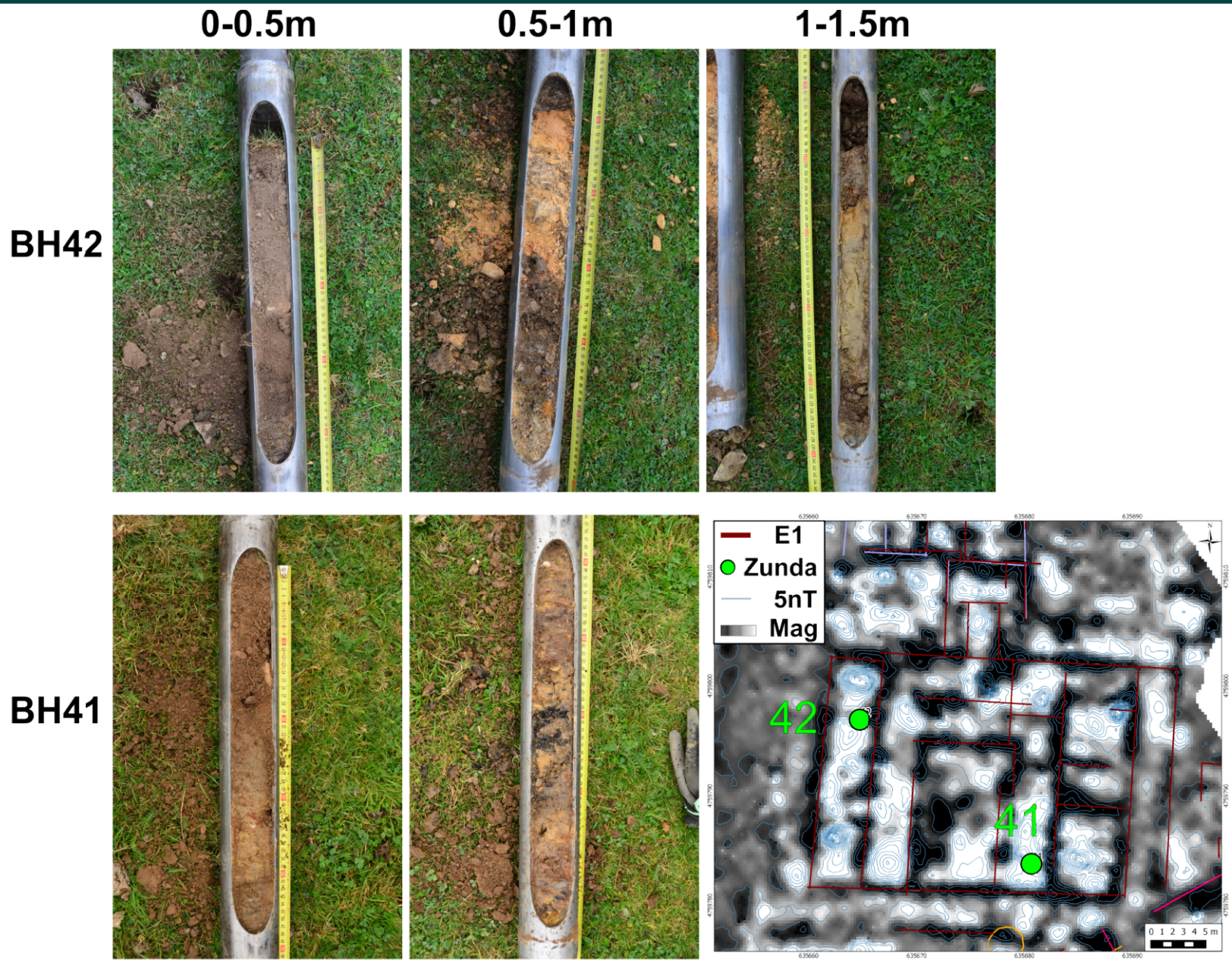




Geoarchaeological survey

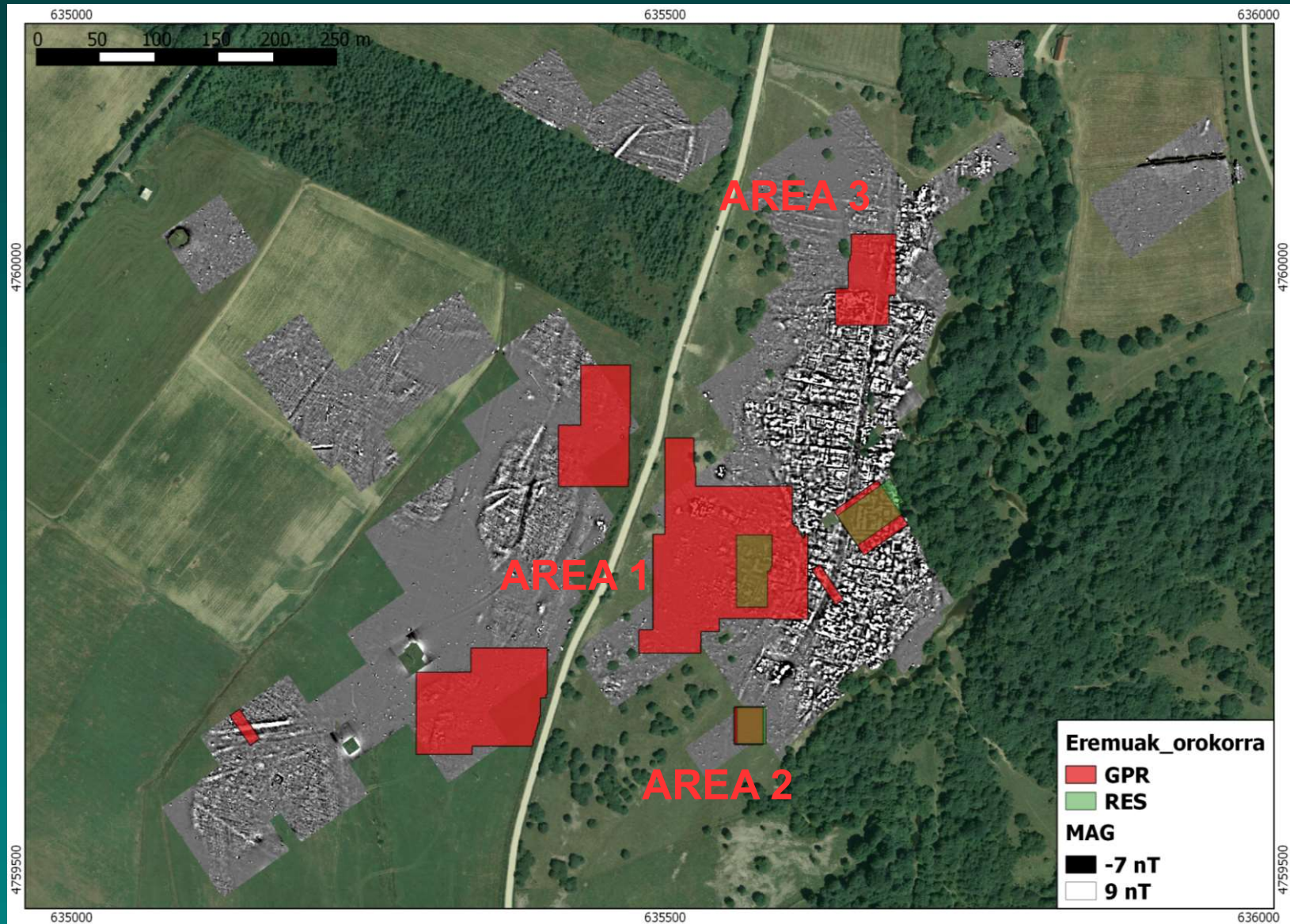
Stratigraphy Type	Lithology/Description	Environment of deposition and chronology
Topsoil	Moderately compact mid- brown sandy silt/clay with rooting and occasional small gravel clasts	recent
Floodplain soil	moderate, friable brown grey silt / clay with occasional medium-sized gravel clasts	recent or possibly relict soil developing with Terrace deposits
Top of archaeology	n/a	n/a
Road	large quartzite clasts in very friable compact orange brown sandy silt matrix	Roman
Obstruction	n/a	n/a
Archaeology	Moderate to firm grey brown silty clay with medium-sized fragments of building material, occasional charcoal and medium to large gravel clasts	Roman
Top of undisturbed deposits	n/a	n/a
Base of archaeology	n/a	n/a
Top of undisturbed deposits	n/a	n/a
Terrace silts	compact mid-brown slightly sandy silt / clay silt with occasional small clasts	Late Quaternary alluvial deposition
Terrace gravels	gravel of small and medium-sized clasts of red sandstone, quartzite, shale in compact silt matrix	Late Quaternary fluvial deposition

Geoarchaeological survey



Complementary surveys

2014
-
2015

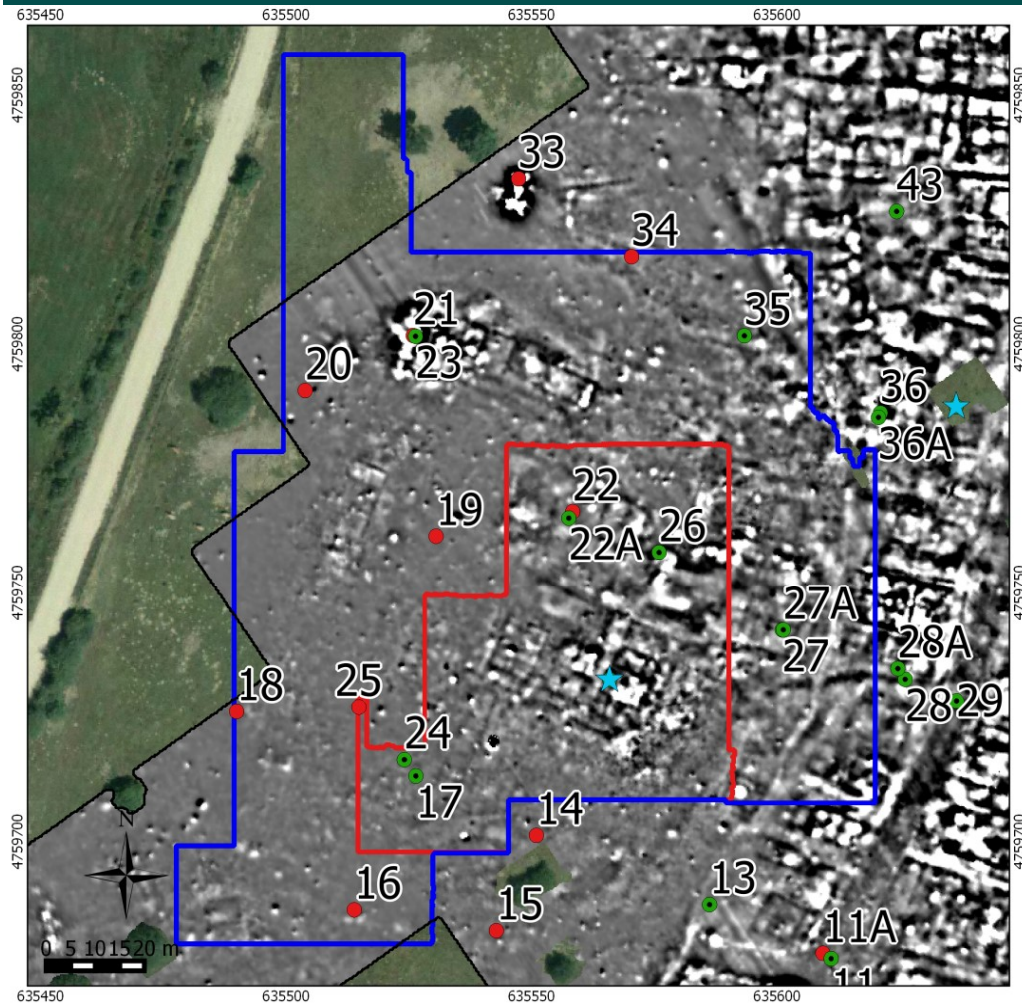


Complementary geophysical surveys

Area 1. GPR

The first campaign: 0.44Ha

The second campaign: 1.17Ha



IDS Hi-mod
600MHz and 200MHz
Traverses separated of 20cm



Area 1. GPR



IDS Hi-mod
600MHz and 200MHz
Traverses separated of 20cm

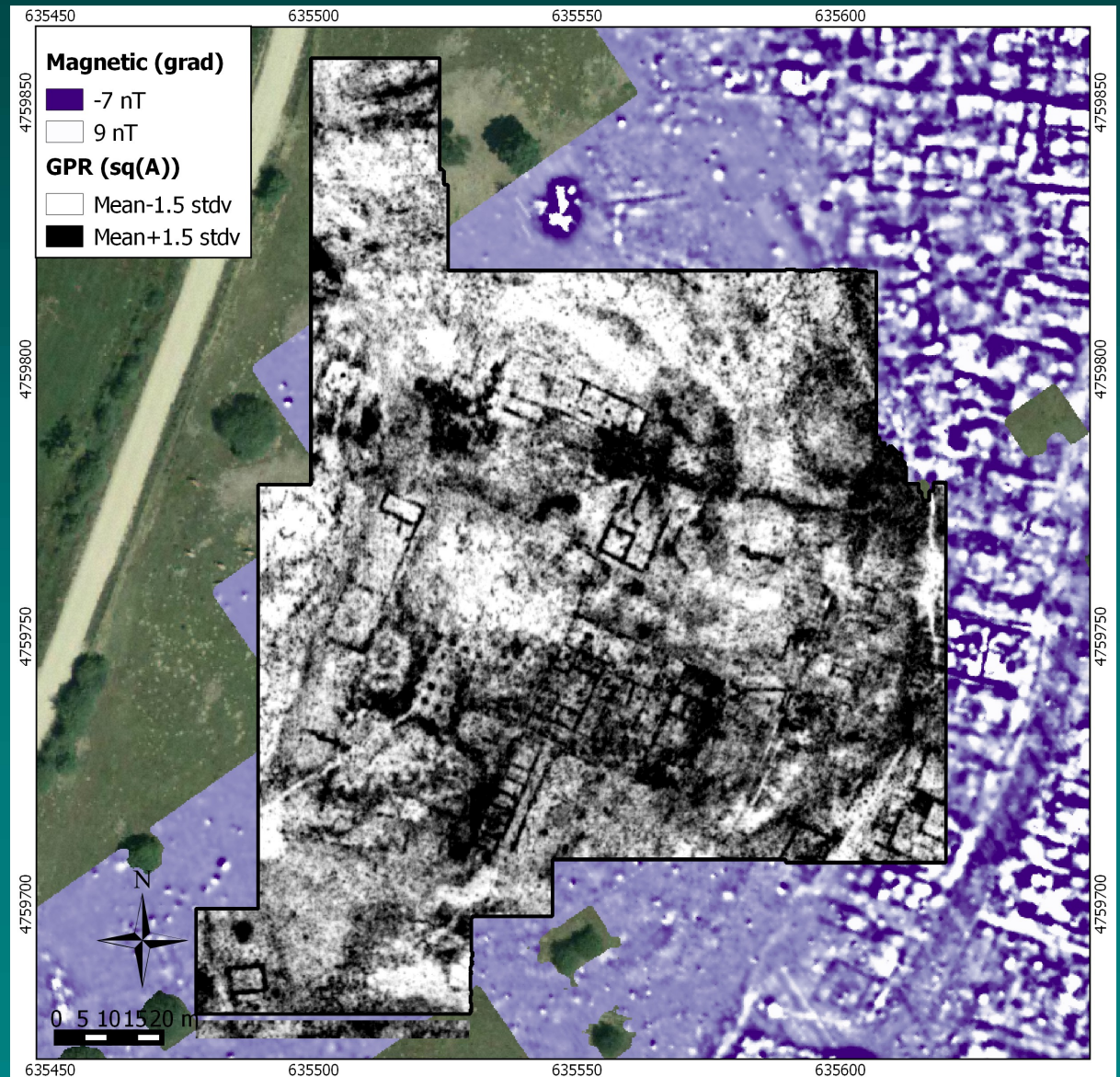
Area 1. GPR

Slice 4: 0.37m-0.54m bgl.
600MHz, Sq(A), v=8cm/ns

SHALLOW LEVEL

Good correlation with MAG

New anomalies detected

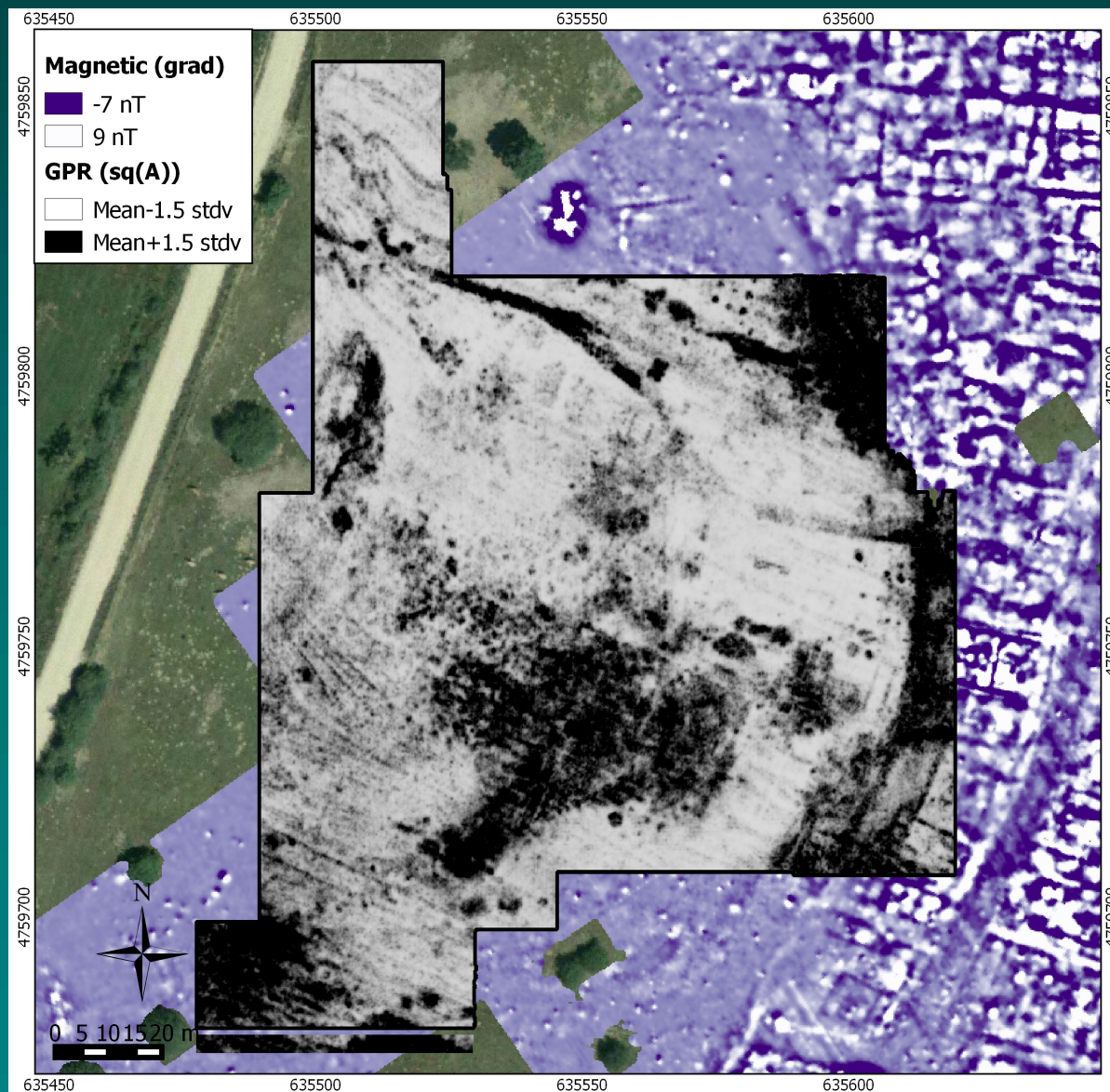


Area 1. GPR

Slice 11: 1.11m-1.27m bgl.
600MHz, Sq(A), v=8cm/ns

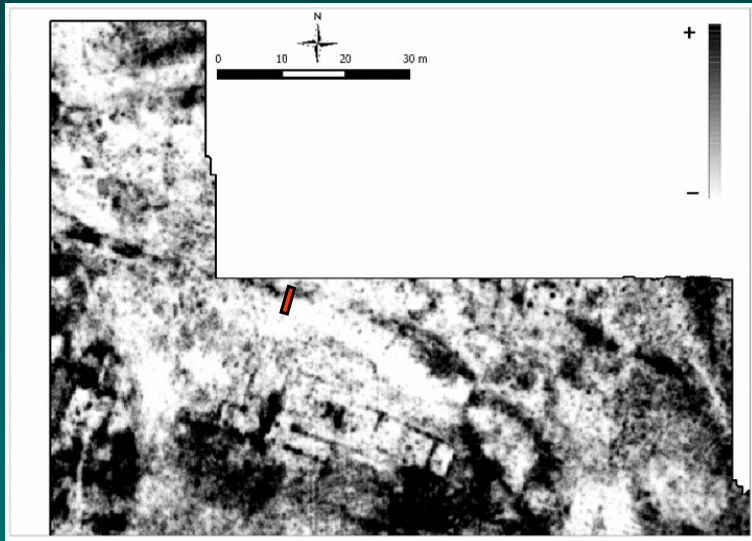
DEEPER LEVEL

Unexpected anomalies in the
north

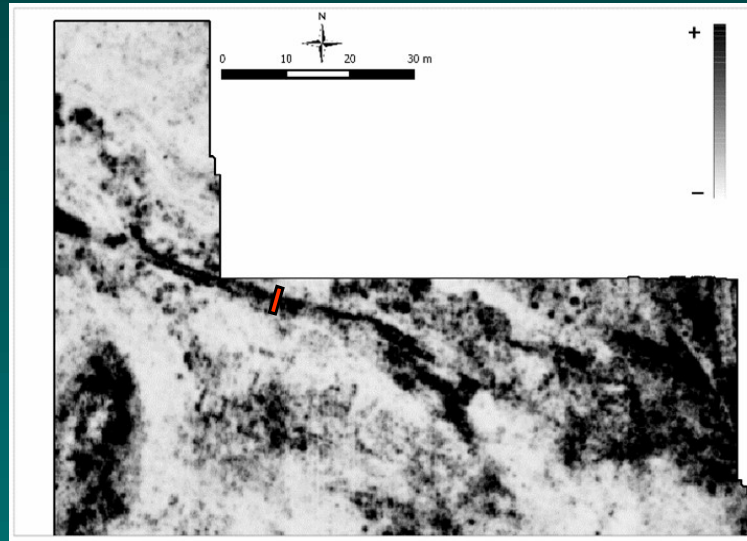


Area 1. Excavation

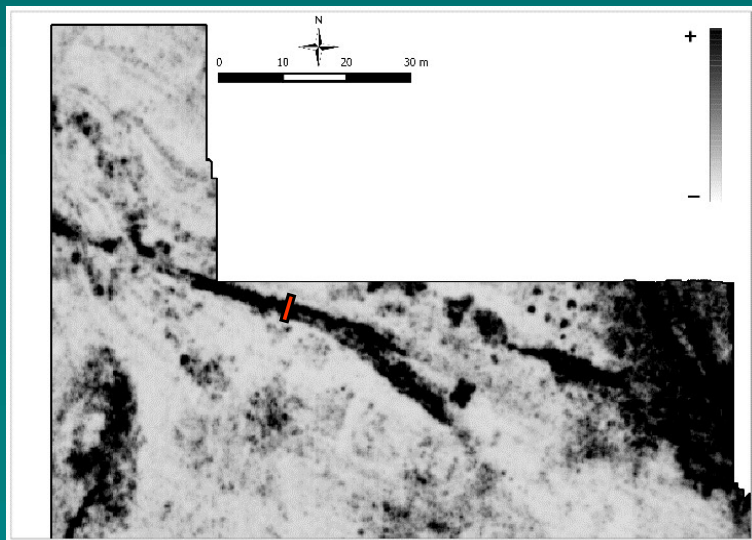
GPR. 0,49m-0,66m



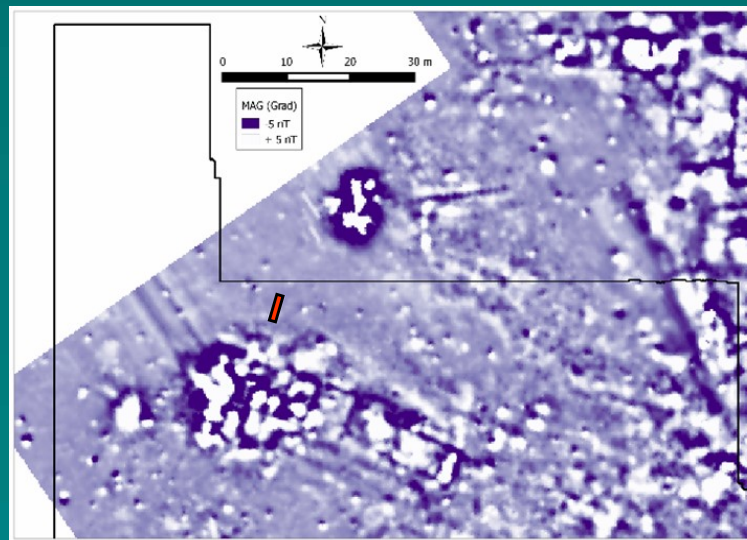
GPR. 0,86m-1,03m



GPR. 1,11m-1,27m



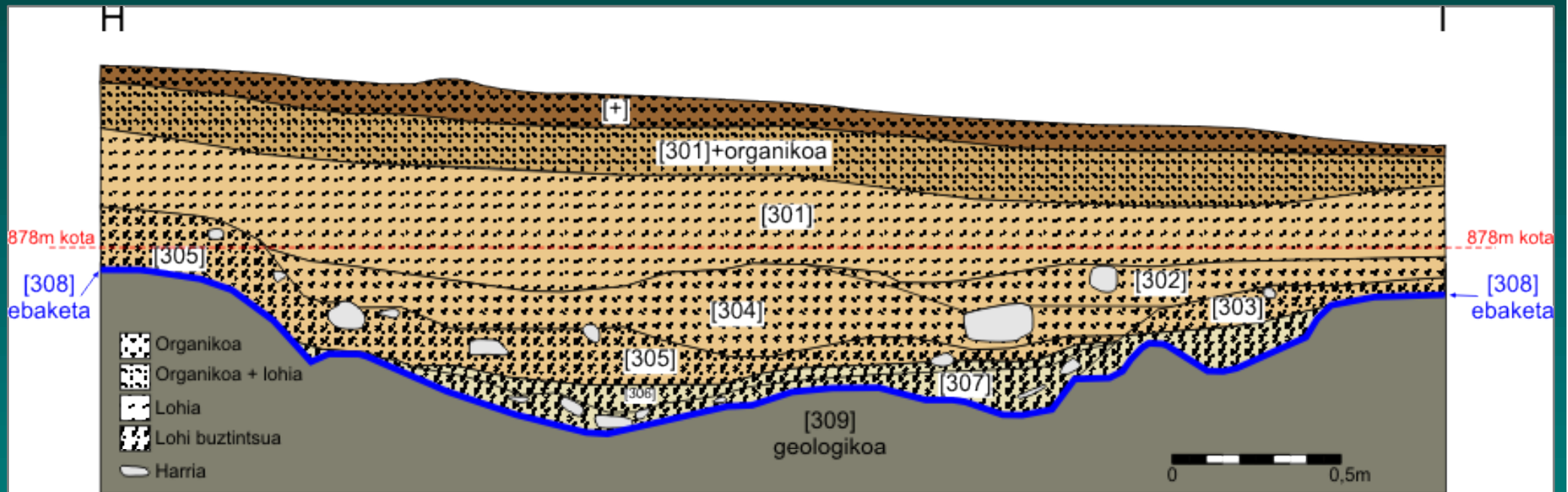
Mapa magnetikoa (-7nT/9nT)



Miaketa-zuloaren kokapena

GPR. 1,11m-1,27m

Area 1. Excavation



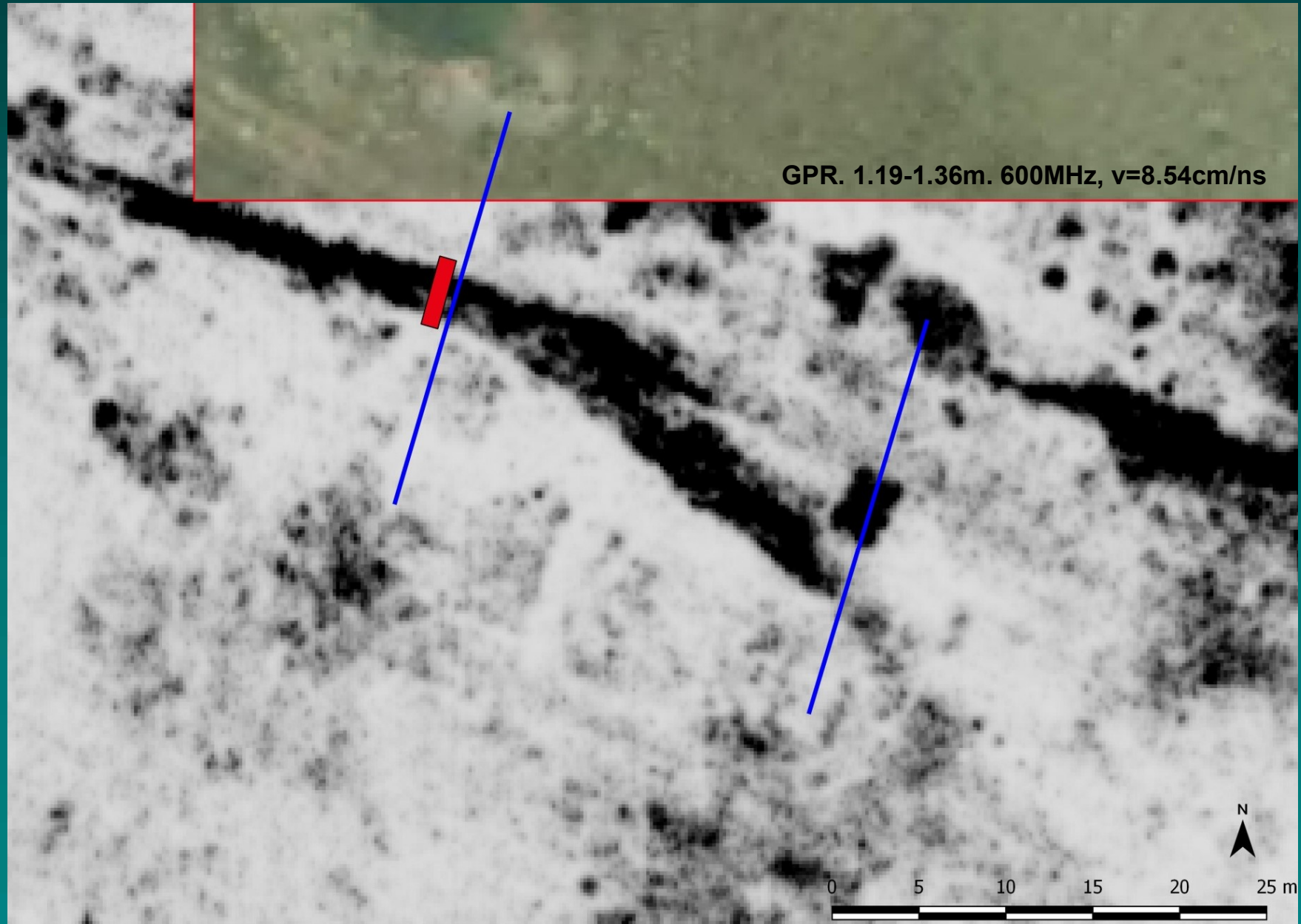
The canalization is “simply” cut in the bedrock and filled with gravel

The contact between with the bedrock reflects the radar energy



Area 1. New data

Excavated trench and electric tomography profiles.



Area 2. GPR & RES

GPR
RES



IDS Hi-mod
600MHz and 200MHz



RM15-Mpx15
0.5m & 1m

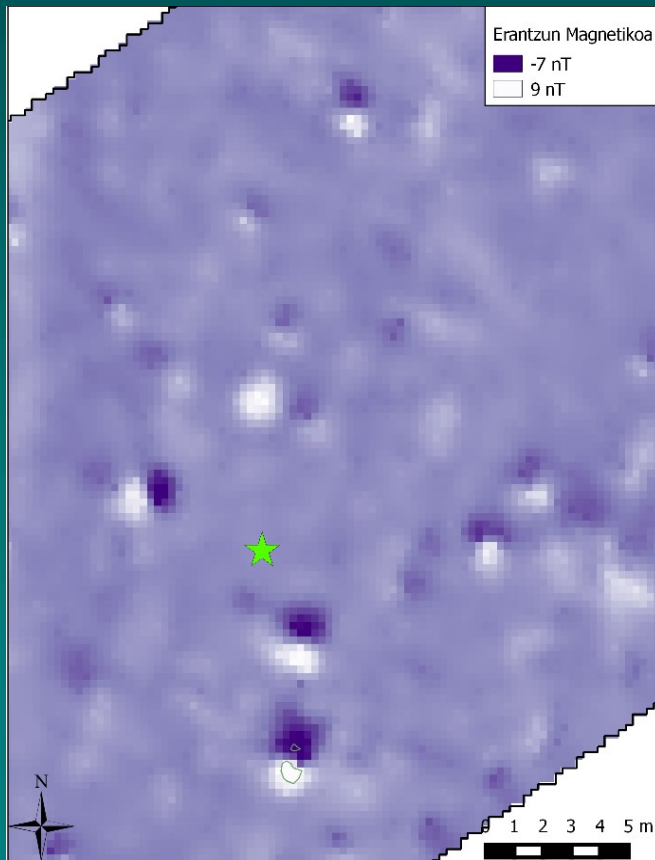


Area 2. GPR & RES

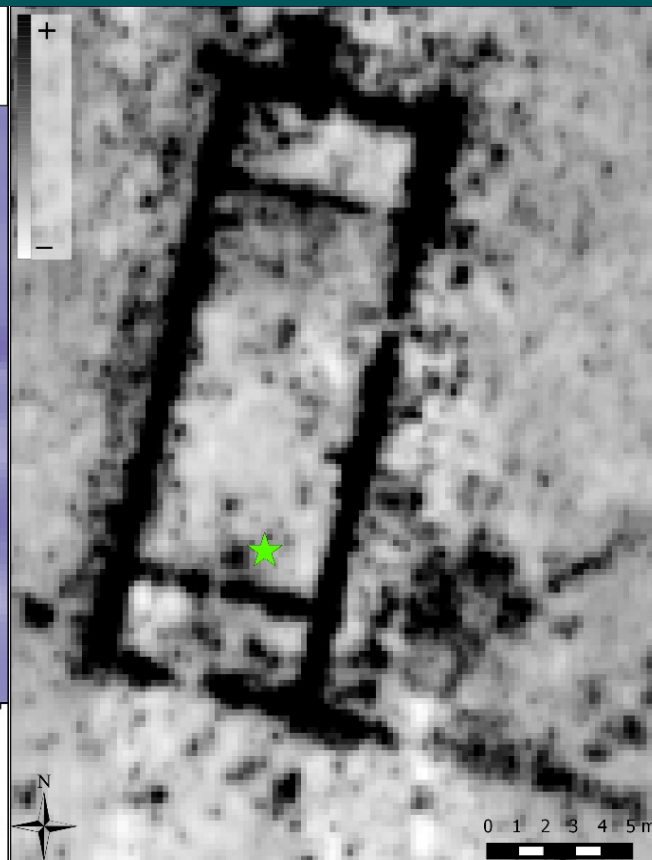
MAG

GPR

RES



-7nT (blue)/ 9nT (white)



0.22.-0.39m ($v=7.3$ cm/ns)



0.5m level.



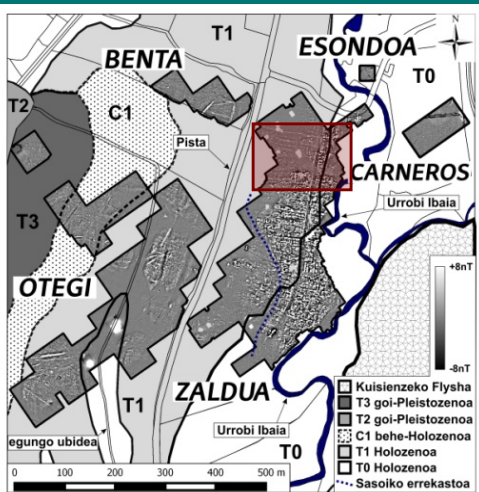
Area 2. New data

EMI survey area.



Area 3. GPR

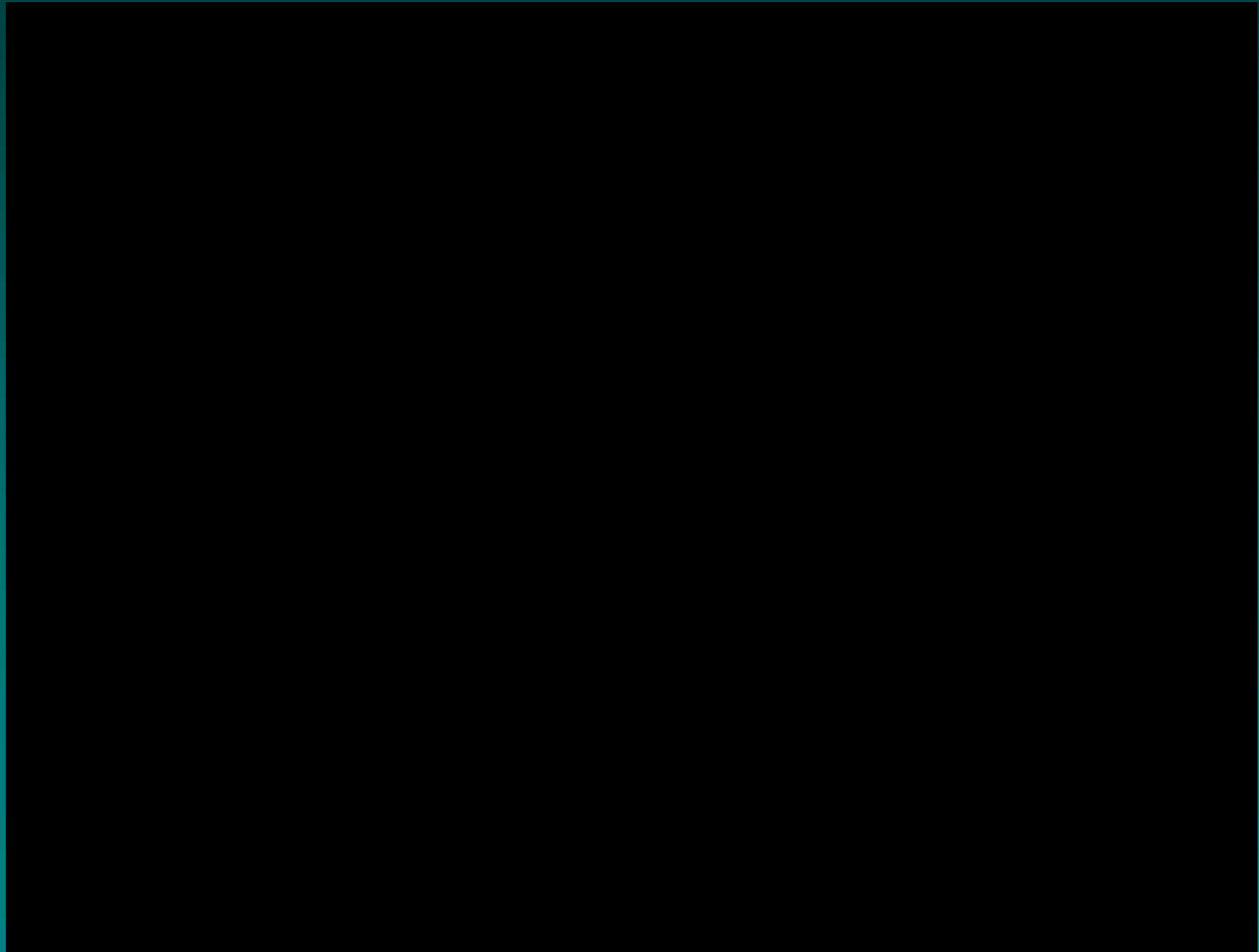
A possible limit in the north



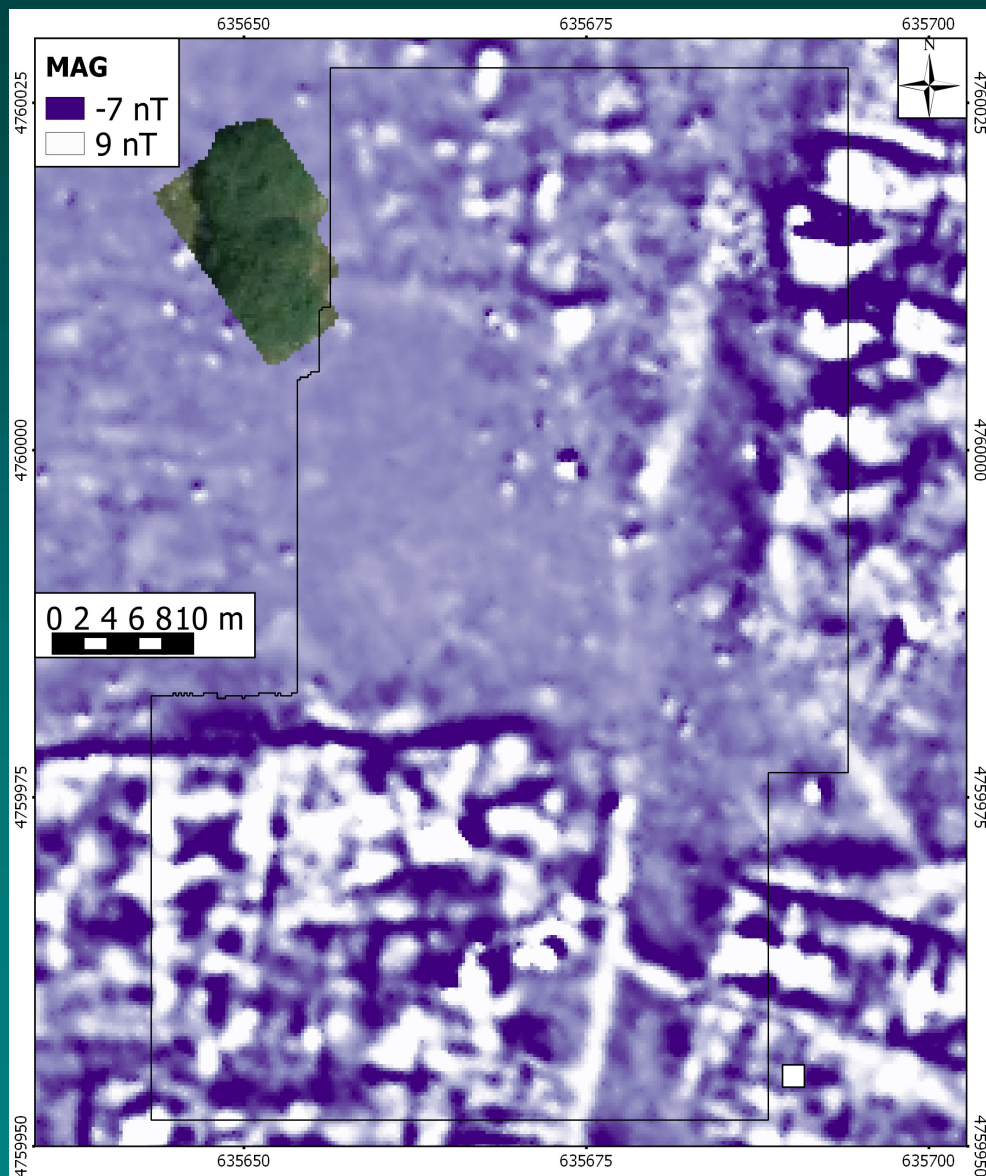
Bartington Grad 601-dual fluxgate gradiometer. Processed data. -7n (black) /+9nT (white)



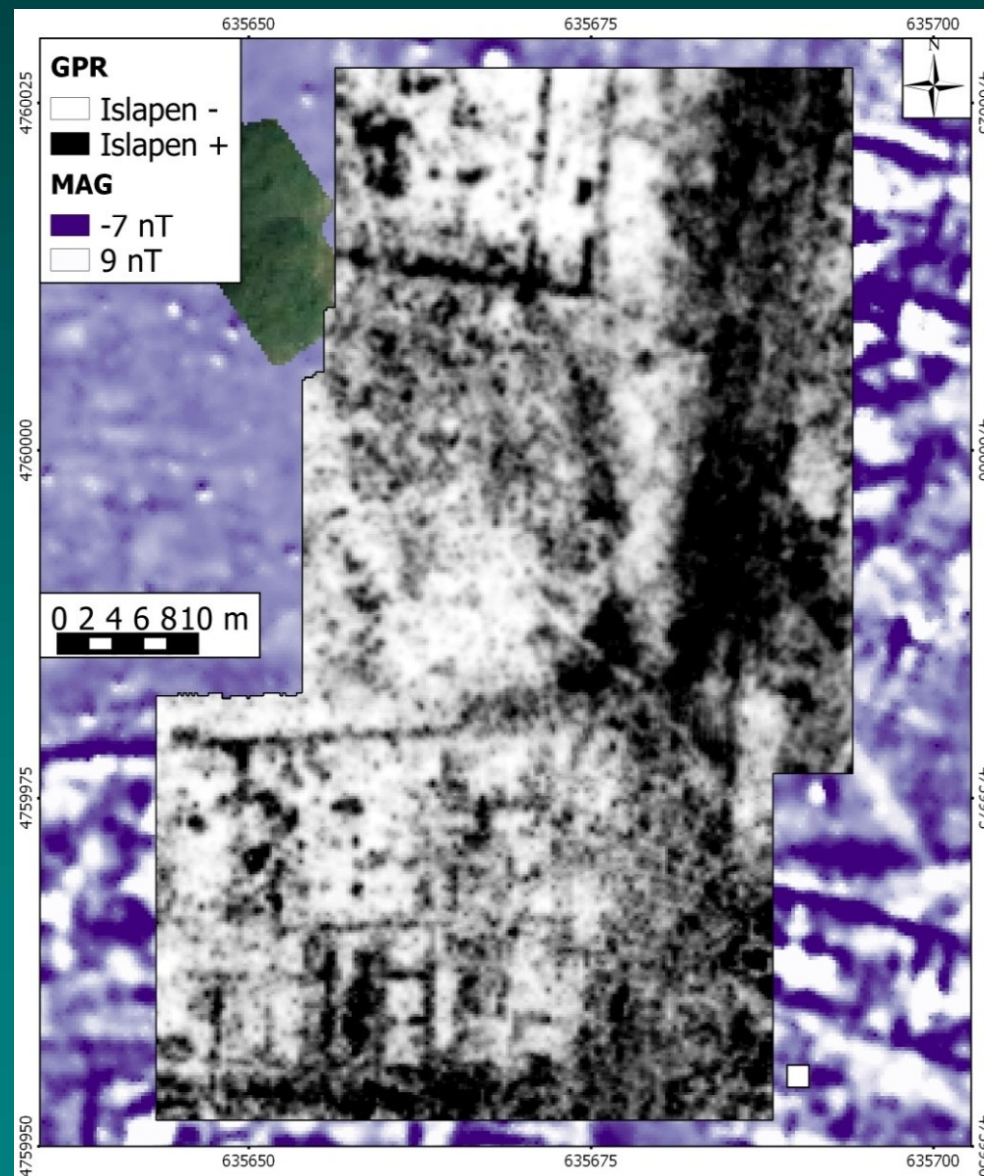
Area 3. GPR



Area 3. GPR

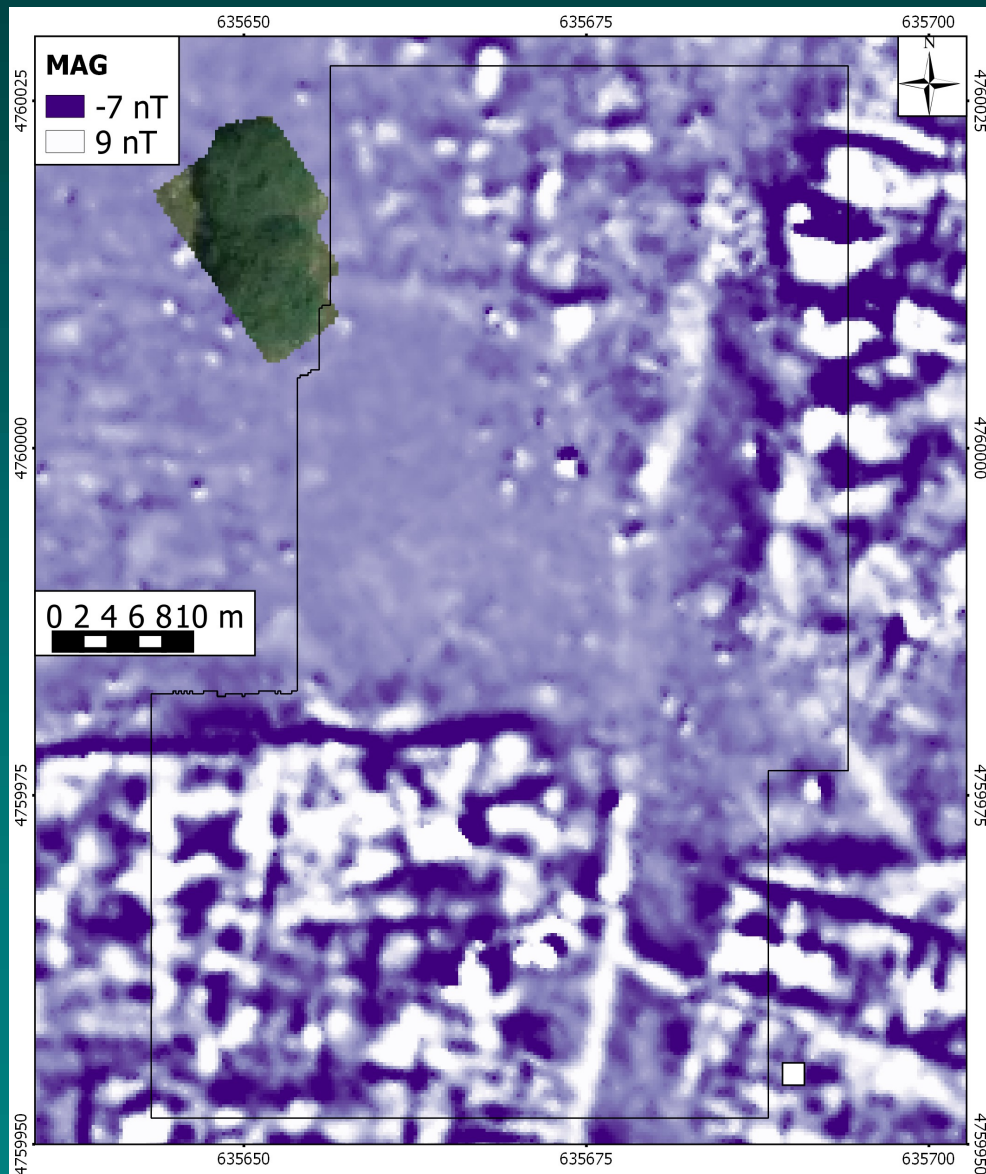


Magnetic results. -7n (black) /+9nT (white)

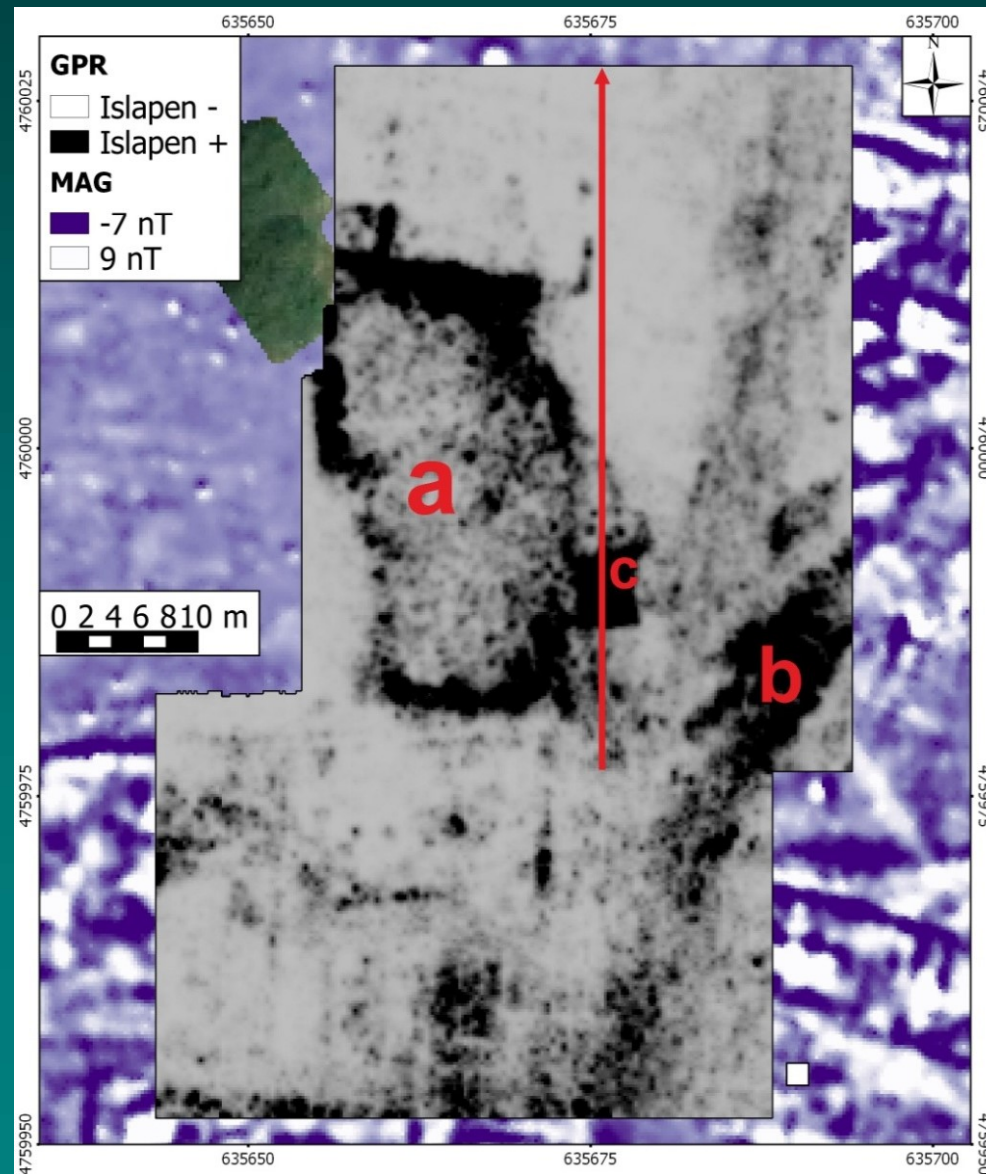


GPR results. 0.50-0.64m (600MHz; v=7.3 cm/ns).

Area 3. GPR

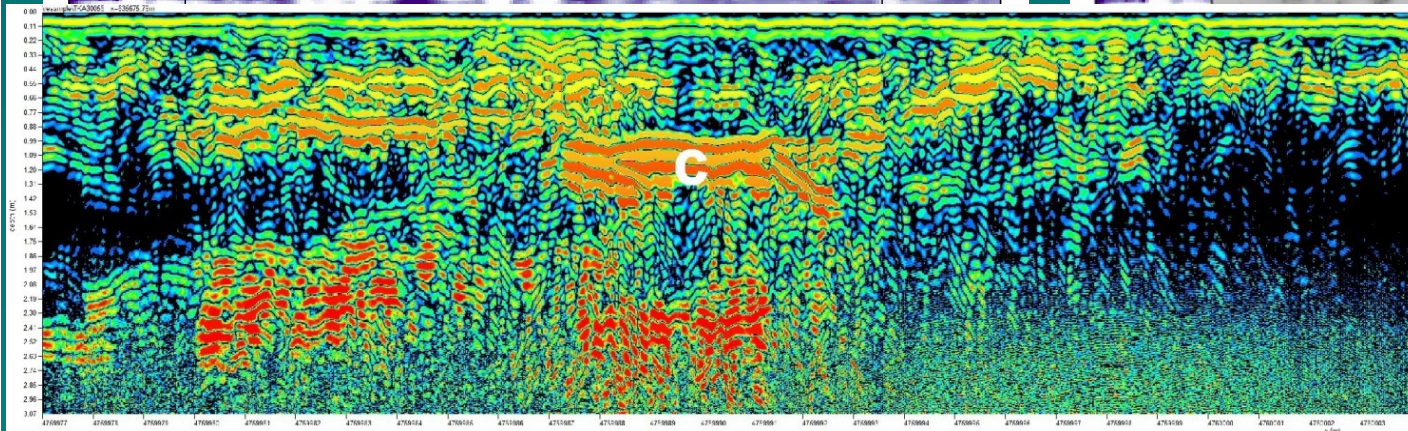
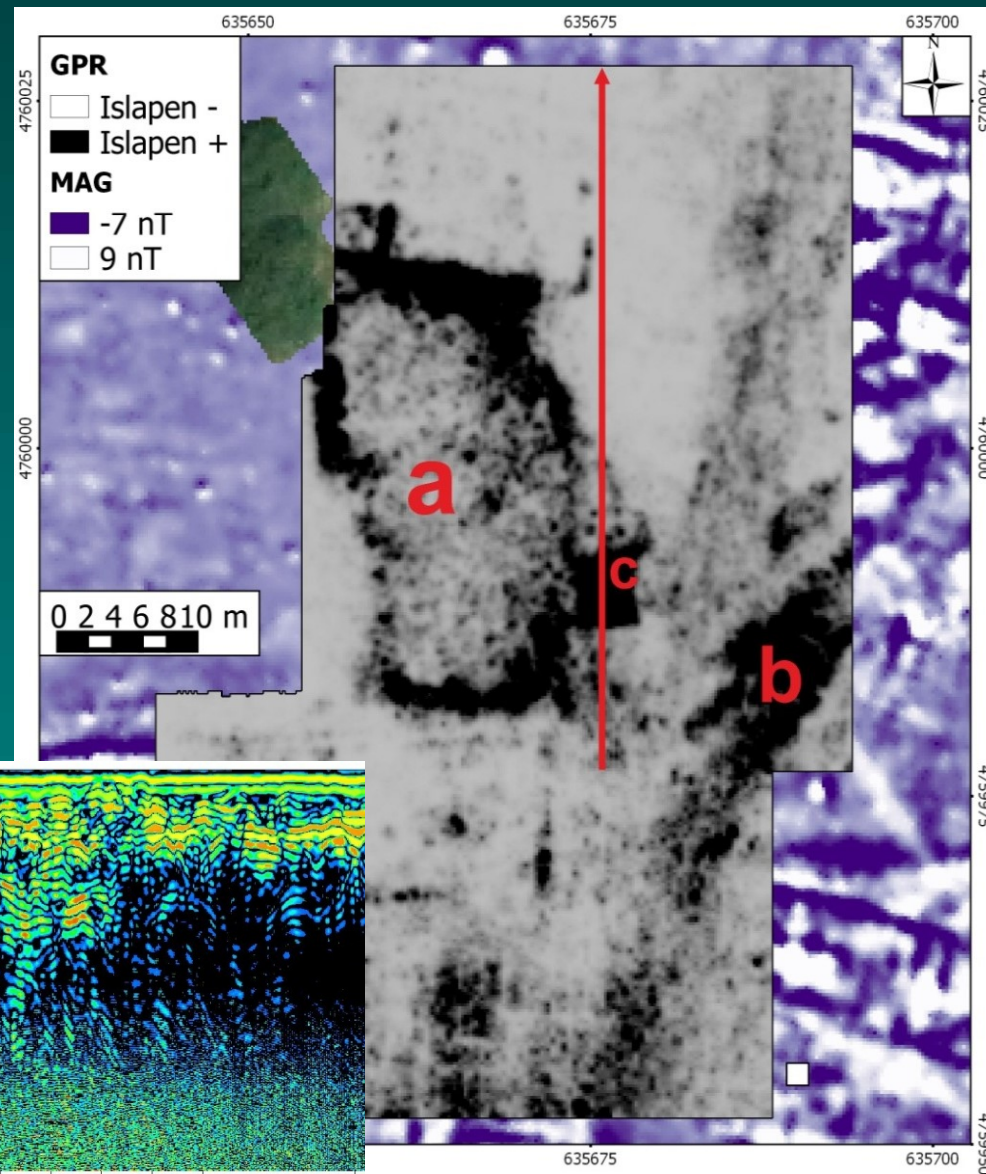
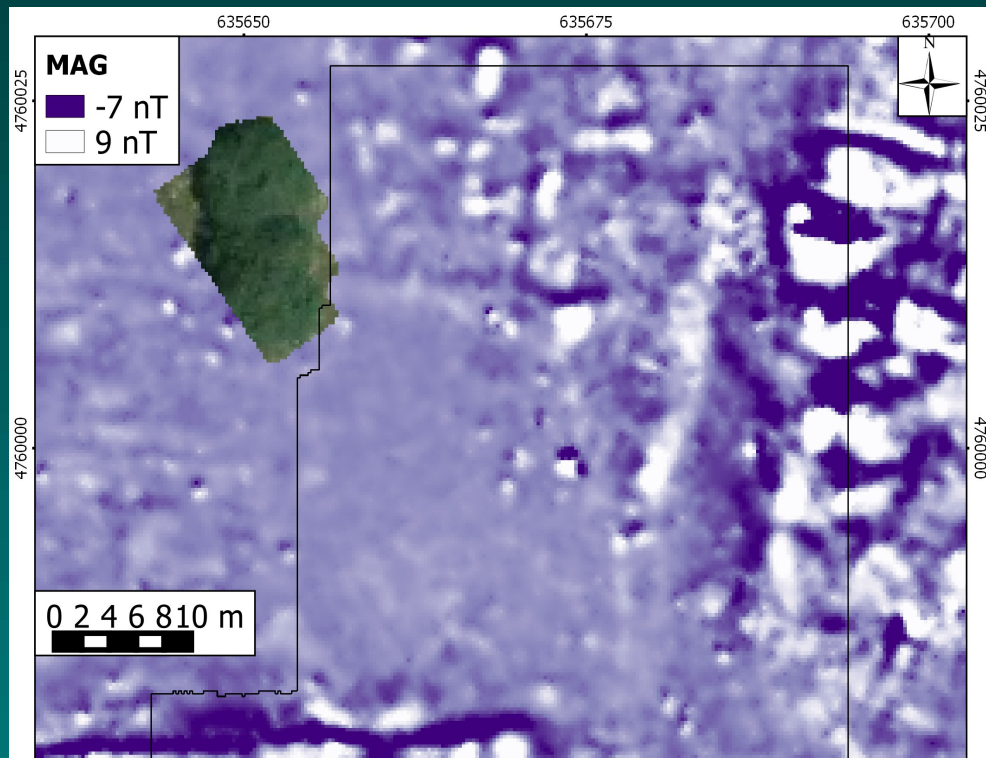


Magnetic results. -7n (black) /+9nT (white)



GPR results. 1.07m-1.21m (600MHz; v=7.3 cm/ns).

Area 3. GPR



GPR radargram. 200MHz

GPR results. 1.07m-1.21m (600MHz; $v=7.3$ cm/ns).

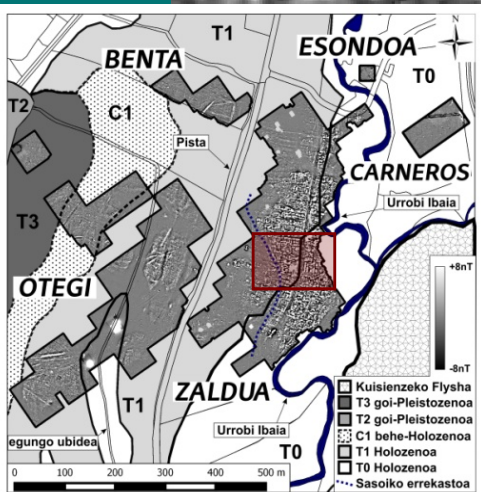
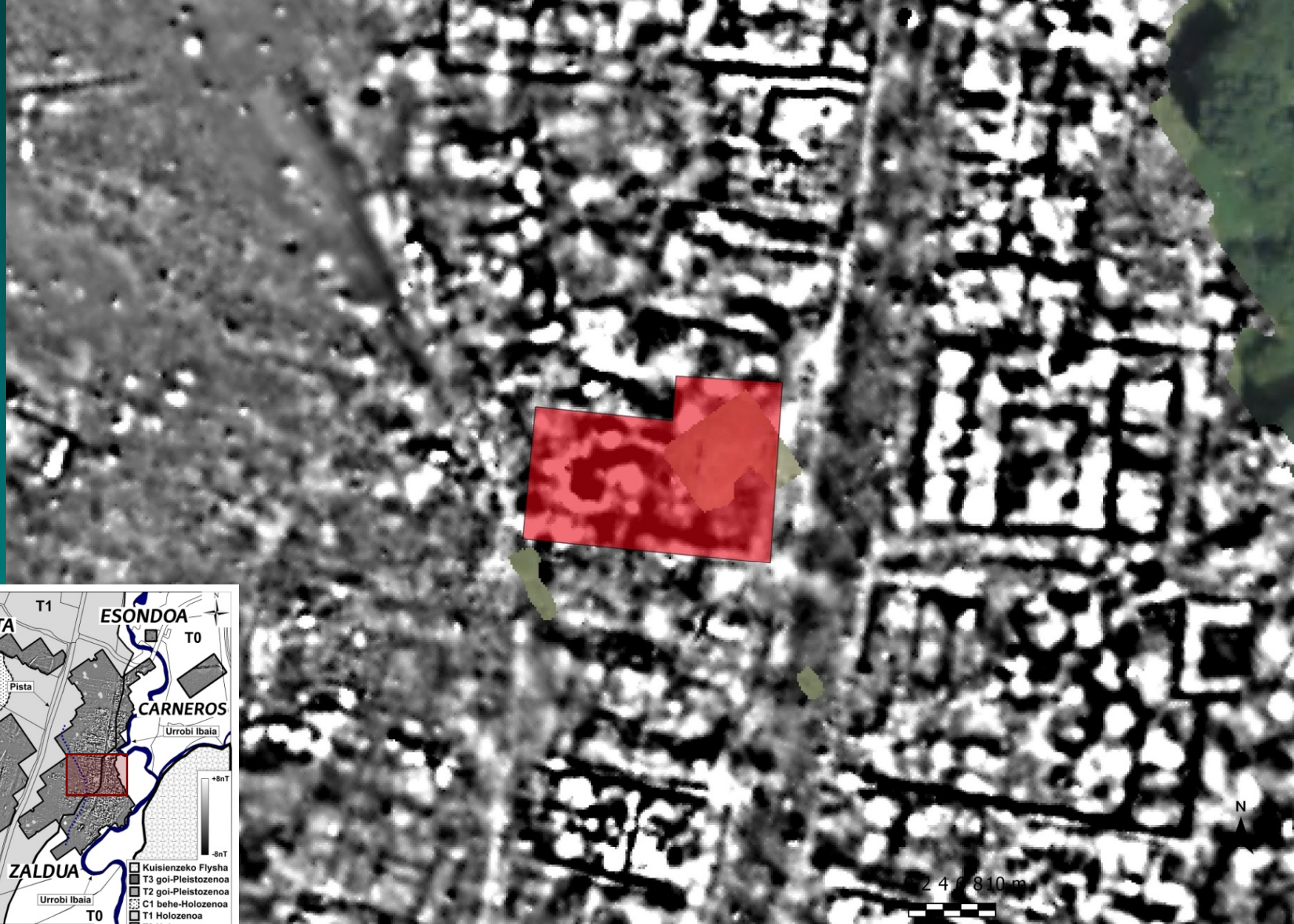


Area 3. New data

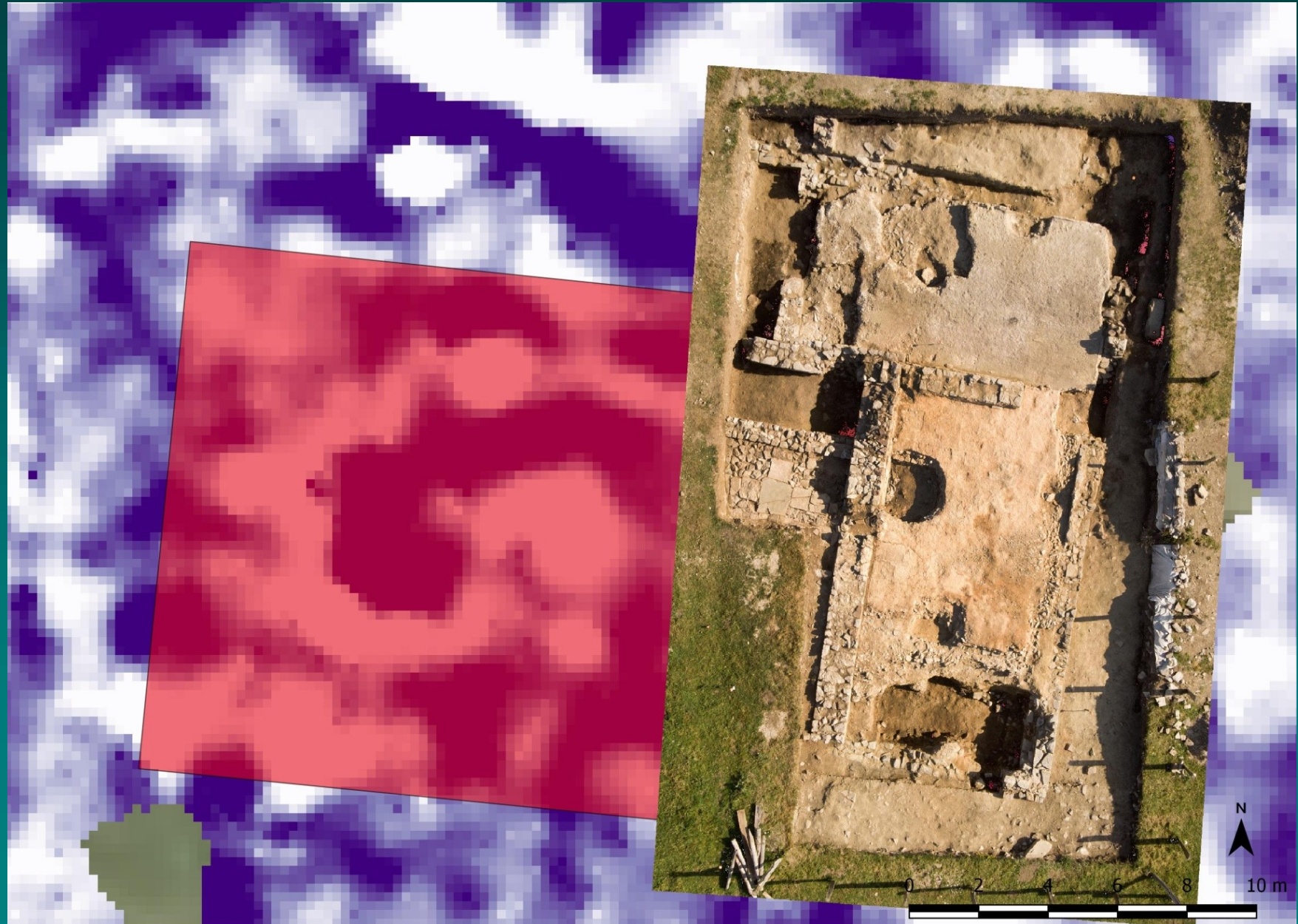
EMI survey area and electric tomography profiles.



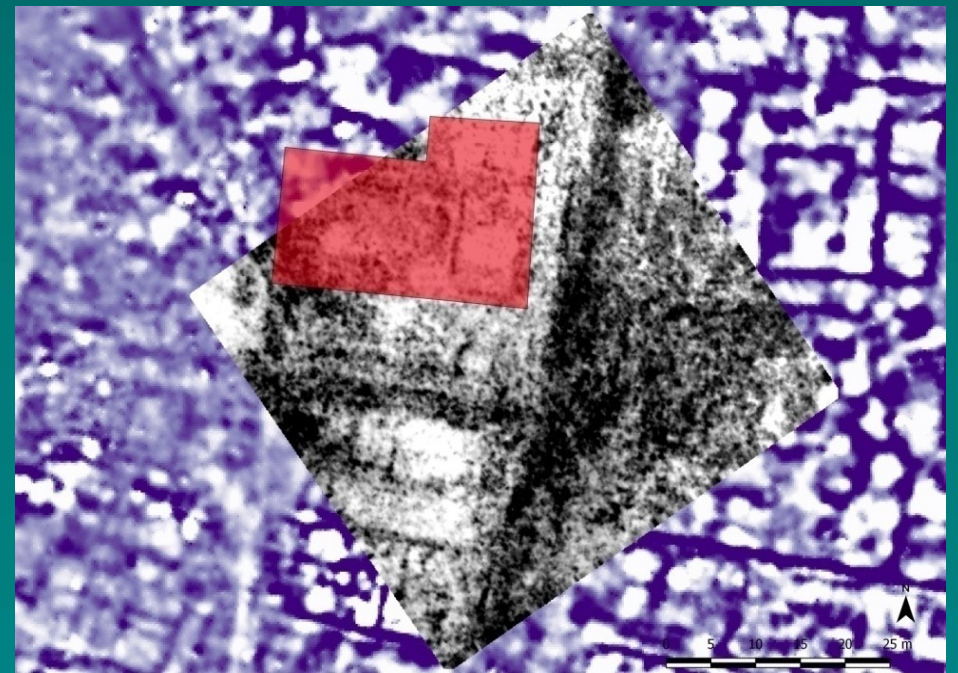
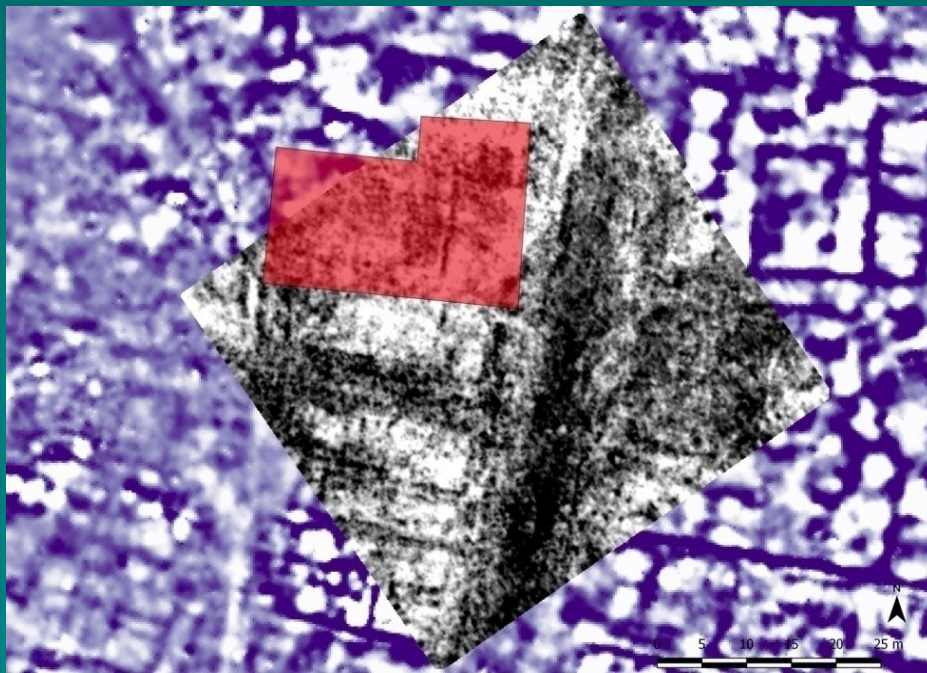
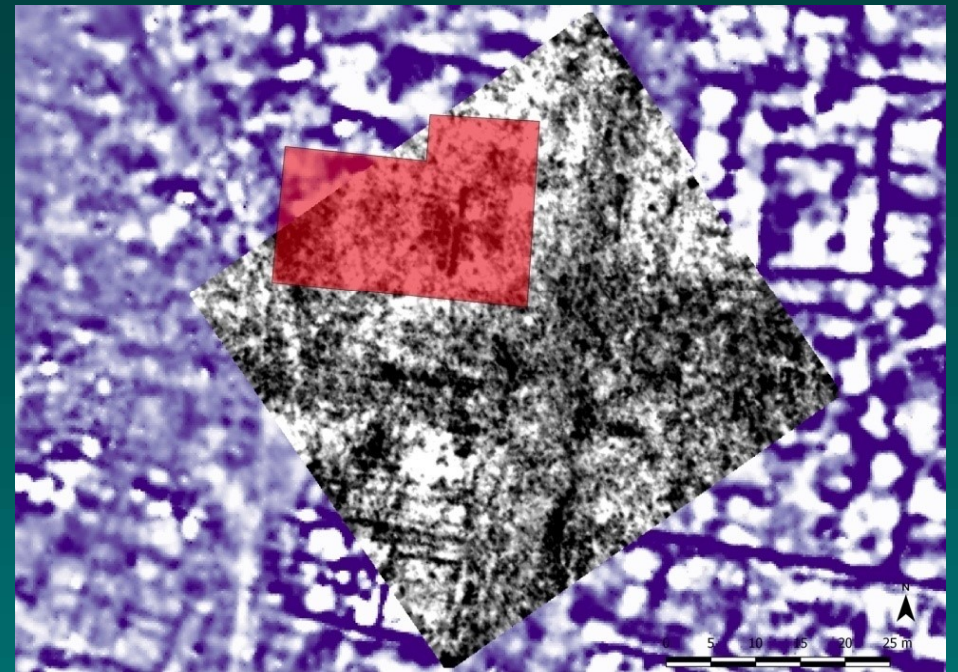
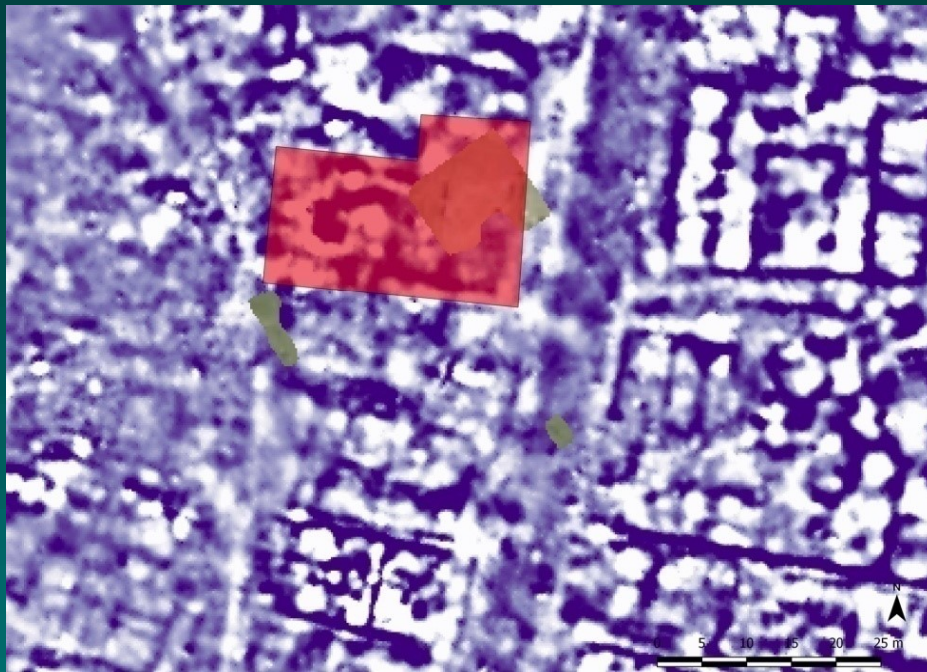
Excavation area



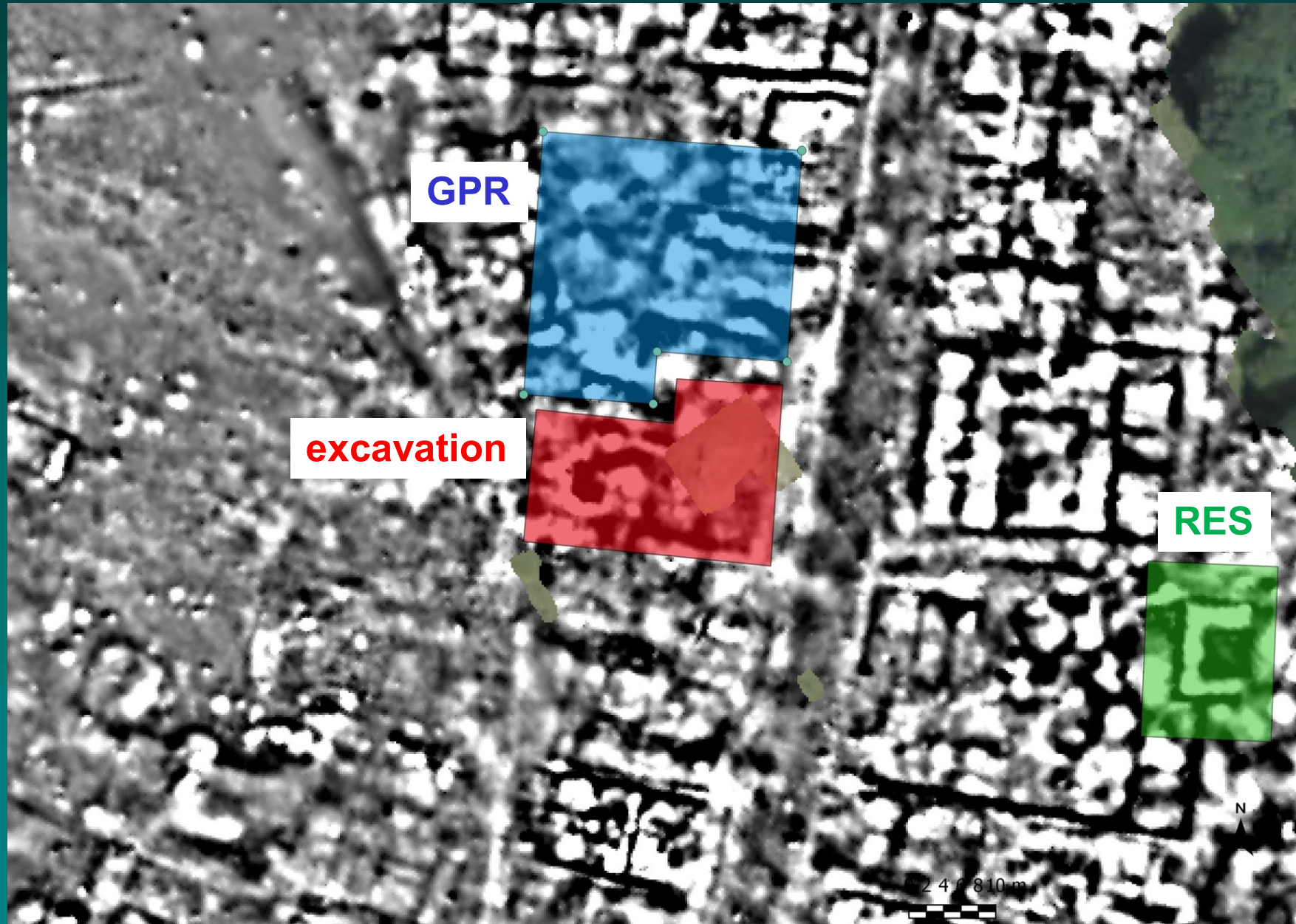
Excavation area



Excavation area



New data



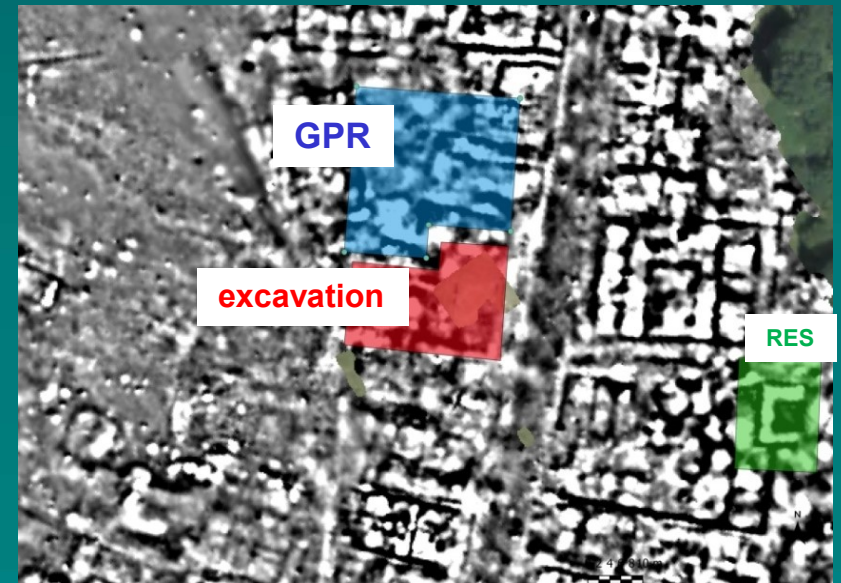
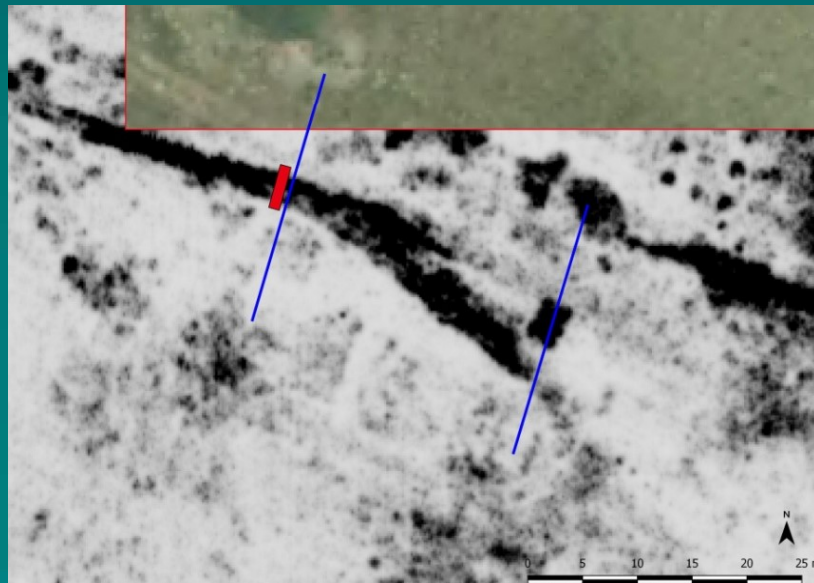
New data

Geophysical data

Boreholes

Geochemical data

Magnetic properties



Thank you for your attention!

