Using satellite images to identify archaeological structures in the Banat Region, SW Romania

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Documentation and information sources

1. Historic maps (from the 17th to the 19th century) and topographical maps (1964 and 1976)
2. Domain bibliography (books, articles and documents that offer information regarding the archaeological sites' location)
3. Arial photographs in the national database (Orthophotogramms from 2005 and 2006)
4. Satellite images (Google Earth)

Objectives

1. The identification of new archaeological sites in order to catalog them and establish their class, done for their protection against anthropic activities or natural degradation
2. The precise localization of archaeological sites gathered in the List of Historic Monuments of Timiş County, for cadastral delimitation, mapping and establishing their protection area

Types of archaeological sites

1. Circular or square fortifications
2. Linear fortifications
3. Antique and medieval roads
4. Open settlements
5. Tumular mounds
6. Other constructions or anthropic modifications of natural structures

Contextual archaeological analysis: landscape archaeology

1. The analysis of the geomorphology of the area occupied by an archaeological site (landscape, altitude, slope, distance to water source, Sun exposition, etc.)
2. Anthropic landscape modifications (landscape improvements, irrigation and drainage channels, terraces, land clearing, etc.)
3. Natural landscape modifications (river meanders, grinds in swamp areas, etc.)

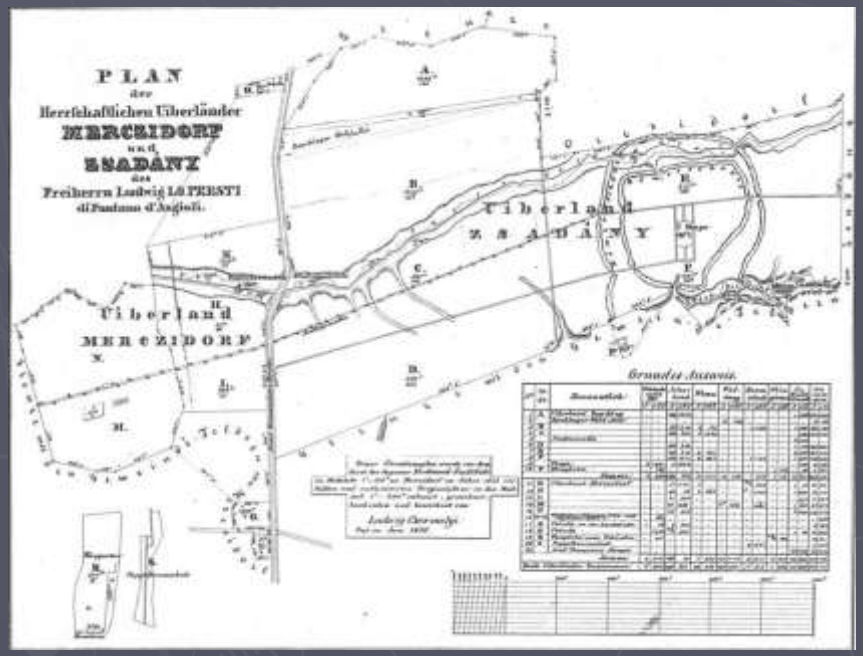
1.a. Circular fortifications

- Example: Padureni, Timis County, prehistoric fortification

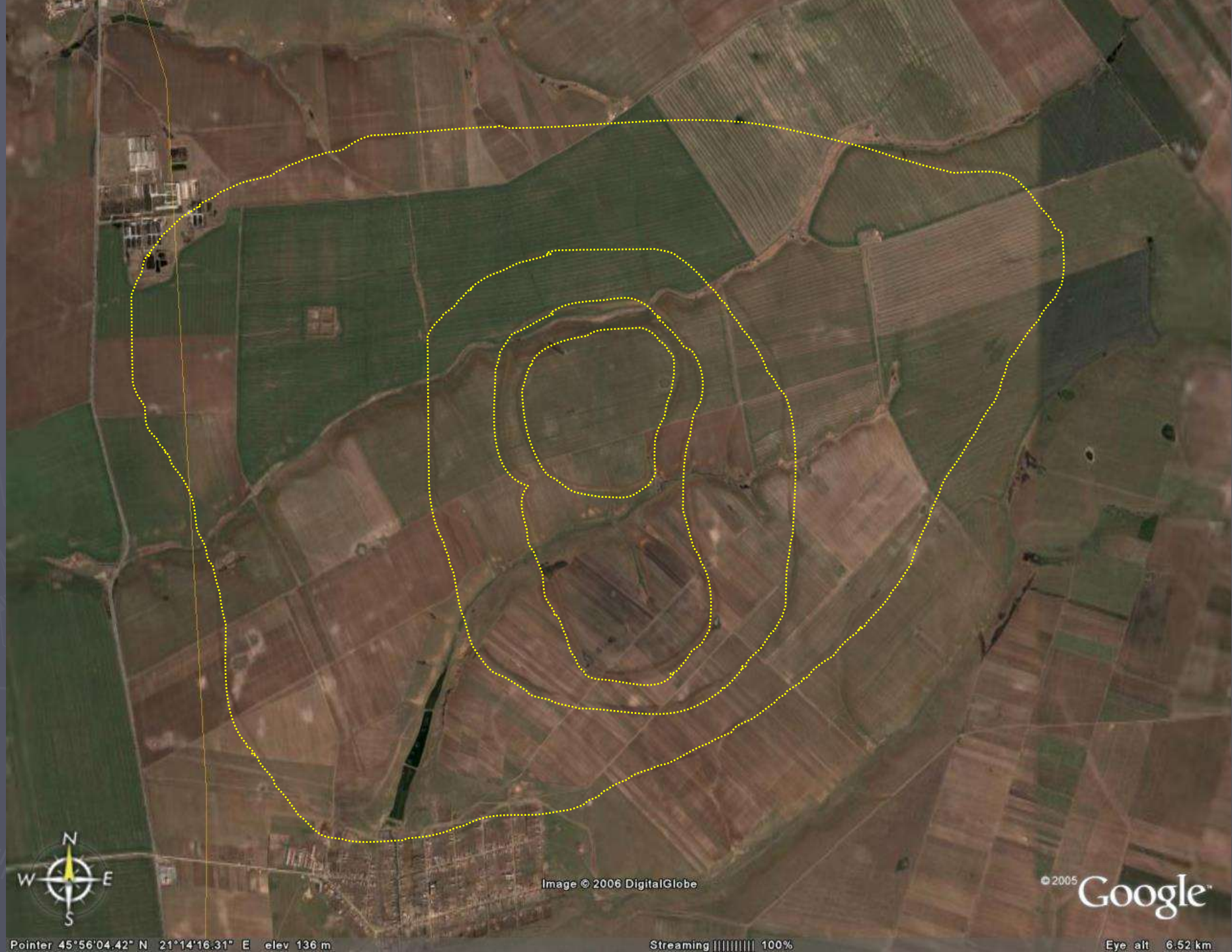
- Example: Vinga, Arad County, prehistoric fortification

1.a. Circular fortifications

- Example: Cornesti (Jadani), Timis County, prehistoric fortification



Mercy's map (1723-1725)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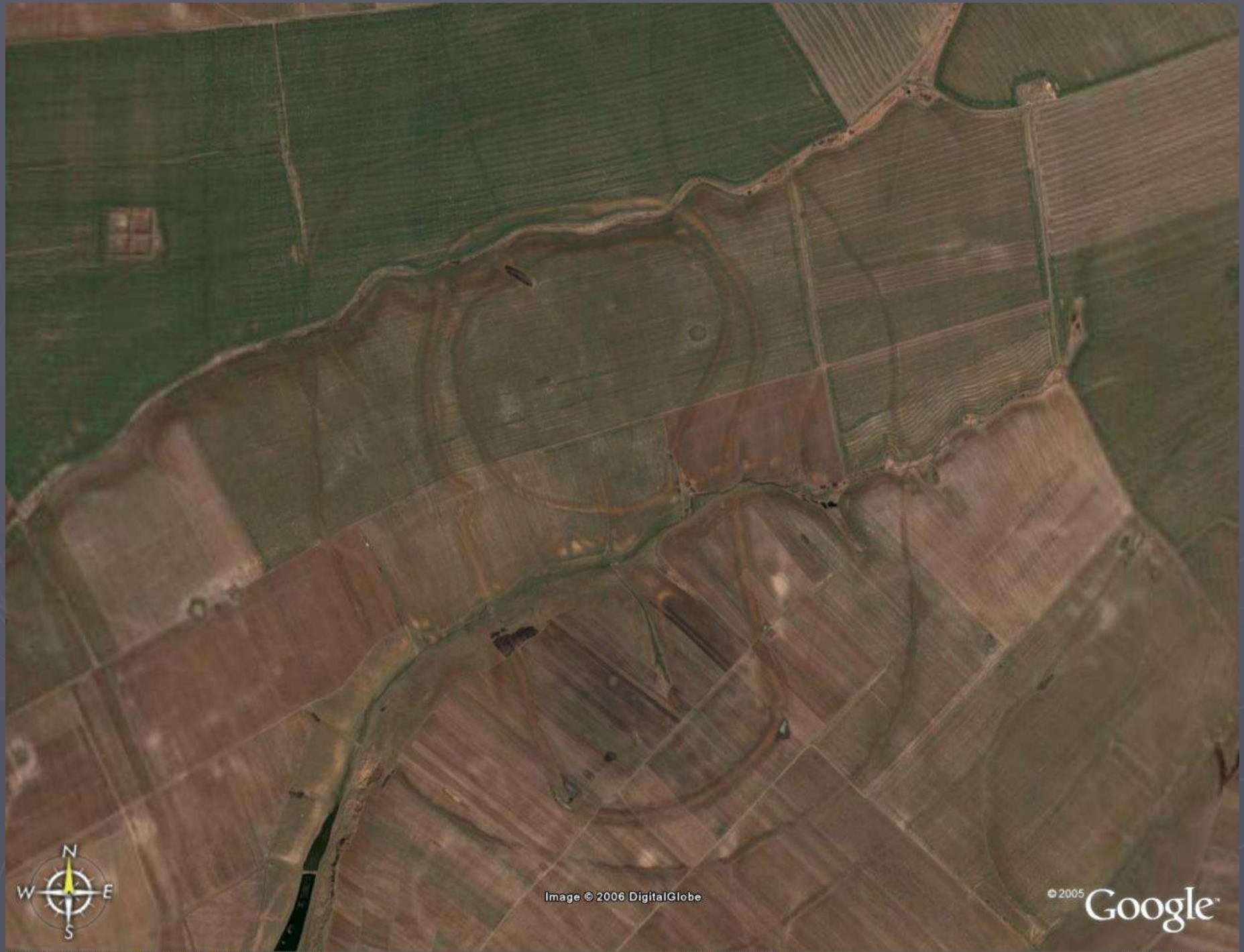
Eye alt 6.52 km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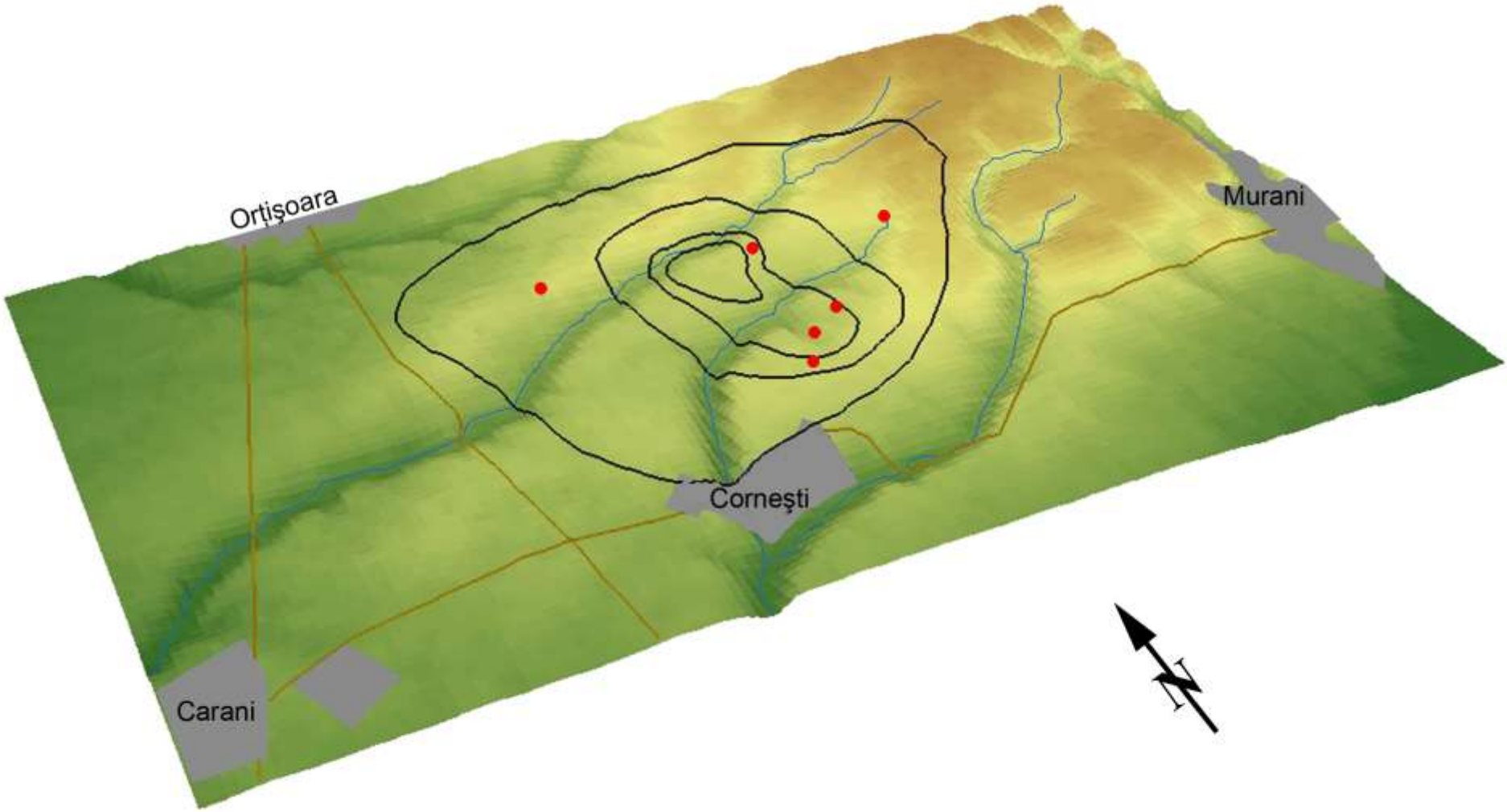

Ortișoara
Murani
Cornești
Carani
N

1.b. Square fortifications

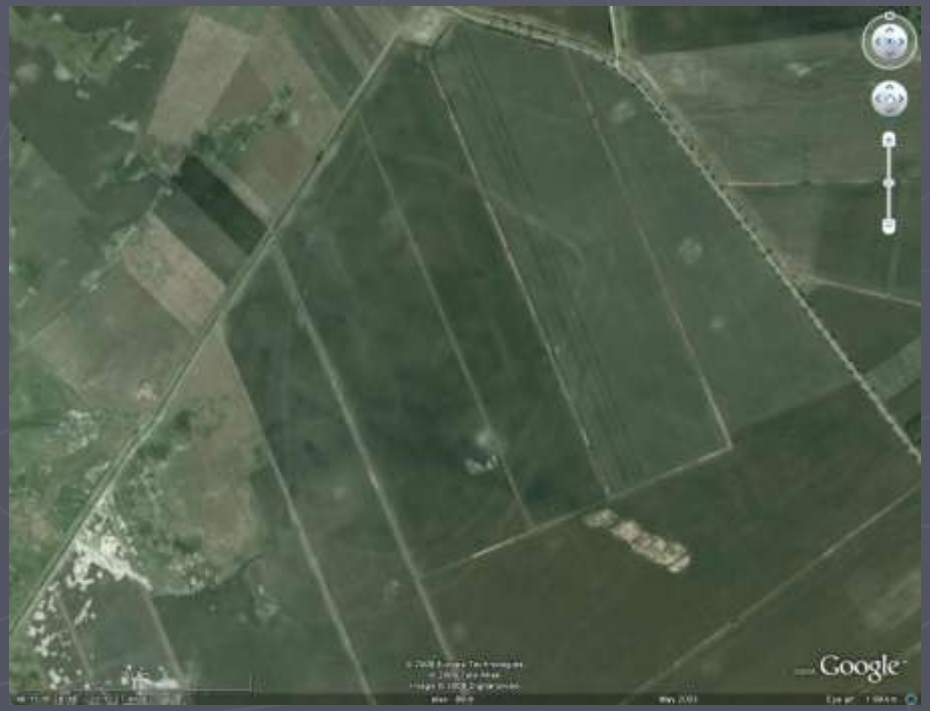
- Example: Varadia, Caras-Severin County, roman castrum

- Example: Beba Veche, Timis County, prehistoric fortification

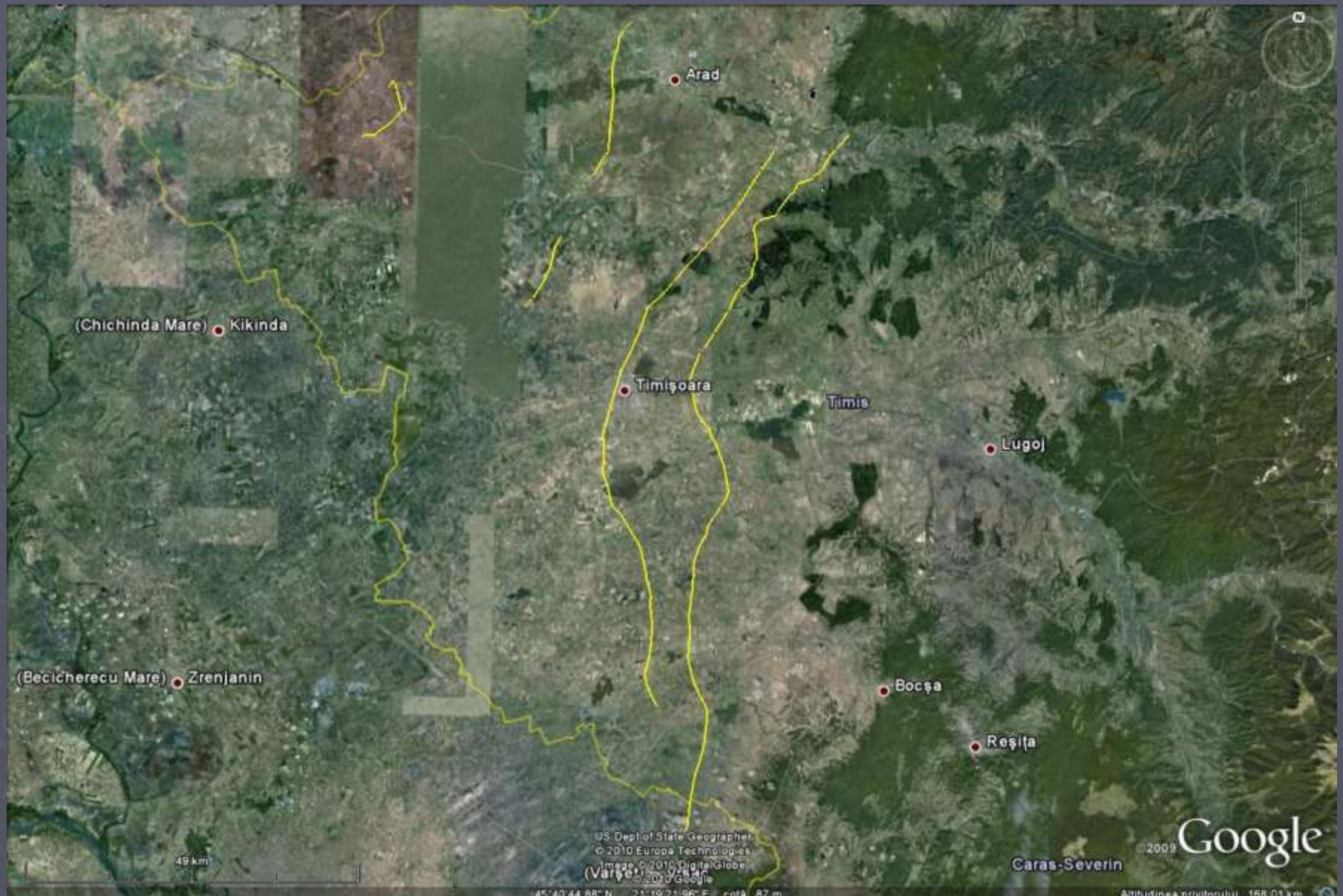
1.c. Complex fortifications

- Example: Santana, Arad County, Bronze Age fortification

- Example: Turnu, Arad County, Bronze Age fortification



2. Linear Fortifications



2. Linear Fortifications

- Example: Bencecu de Sus, Timis County, Roman vallum no. 3

- Example: Alios, Timis County, Roman vallum no. 2

3. Antique and medieval roads

- Example: Vladimirescu, Arad County, medieval road overlaying a prehistoric fortification

- Example: Cornesti, Timis County, medieval road overlaying a prehistoric fortification

3. Antique and medieval roads

- Example: Fiscut, Arad County, medieval road

- Example: Frumuseni, Arad County, medieval road

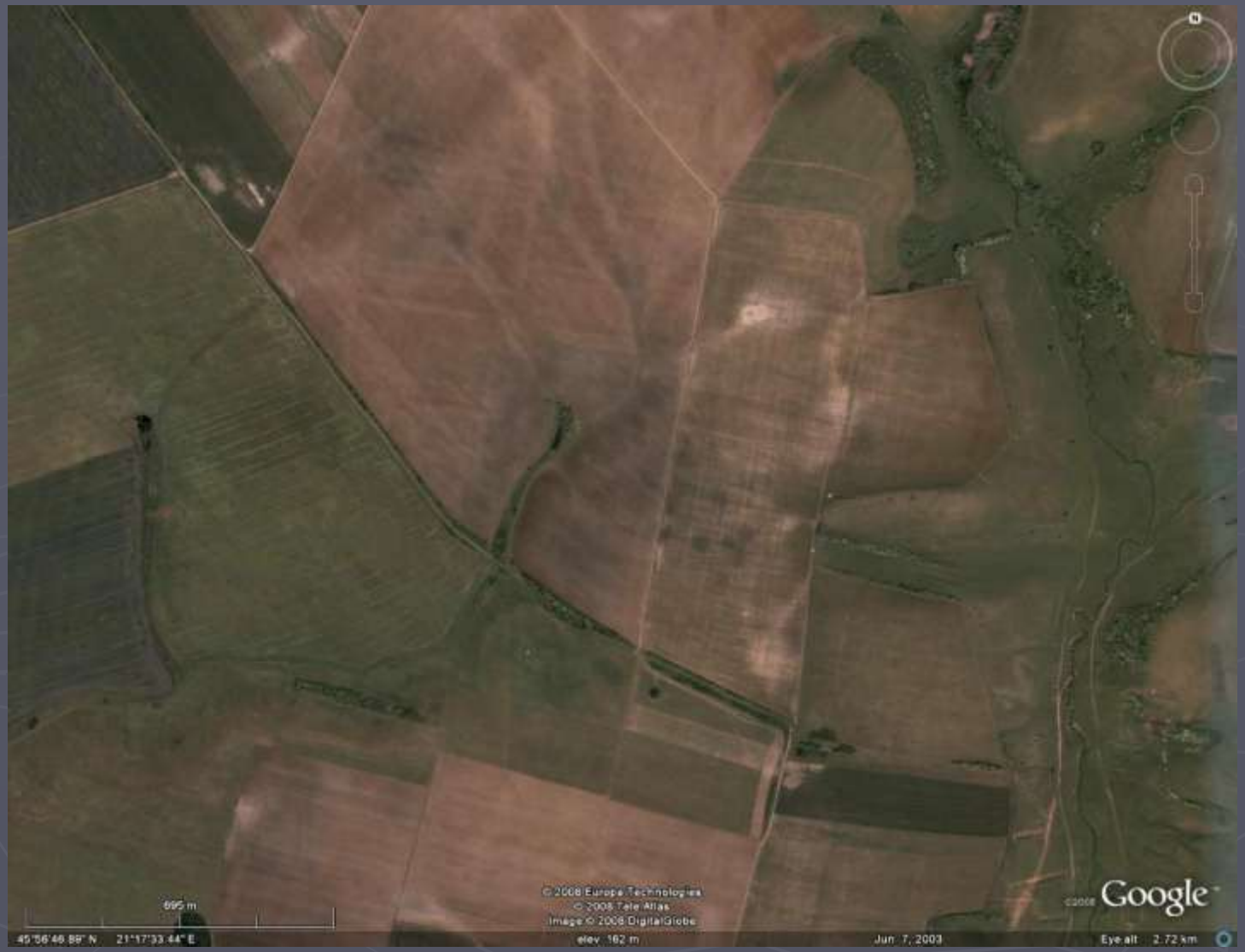
4. Open settlements

- Example: Mailat, Arad County, Bronze Age houses

- Example: Seceani, Timis County, Bronze Age houses

4. Open settlements

- Example: The medieval village Darjele, Timis County, inexistent today, with land lots traces



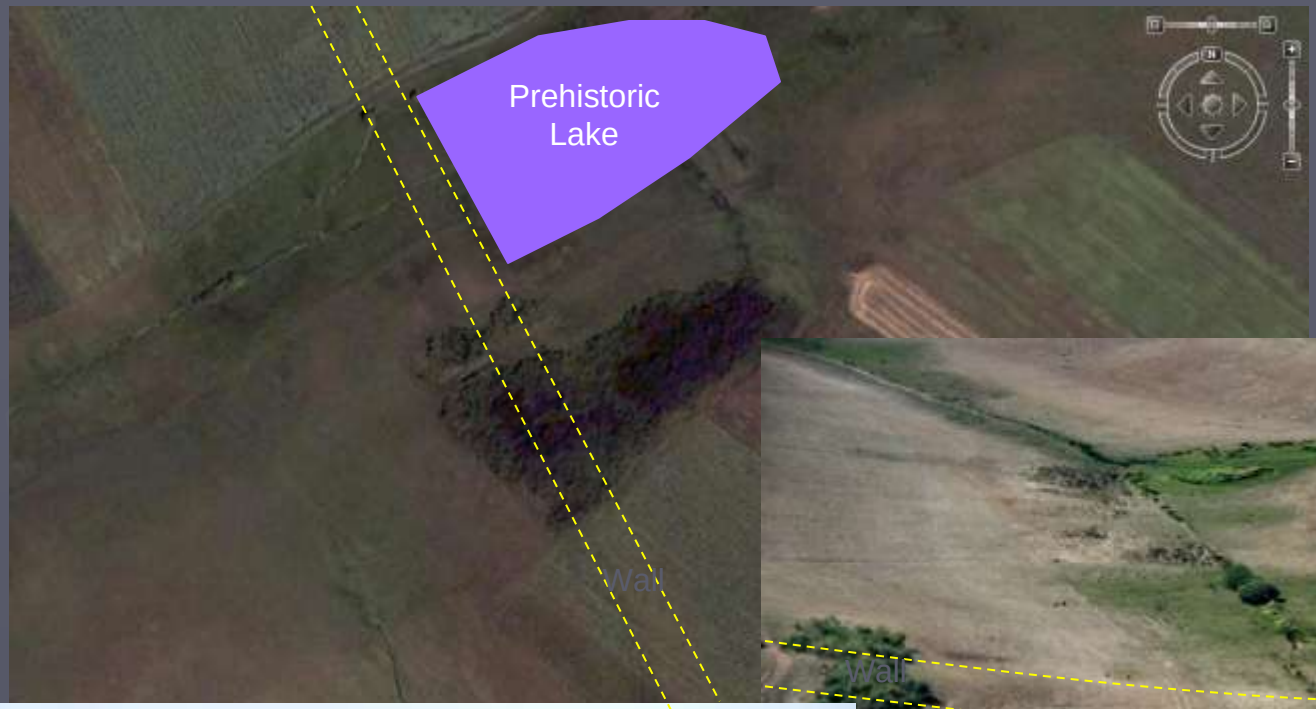
4. Open settlements

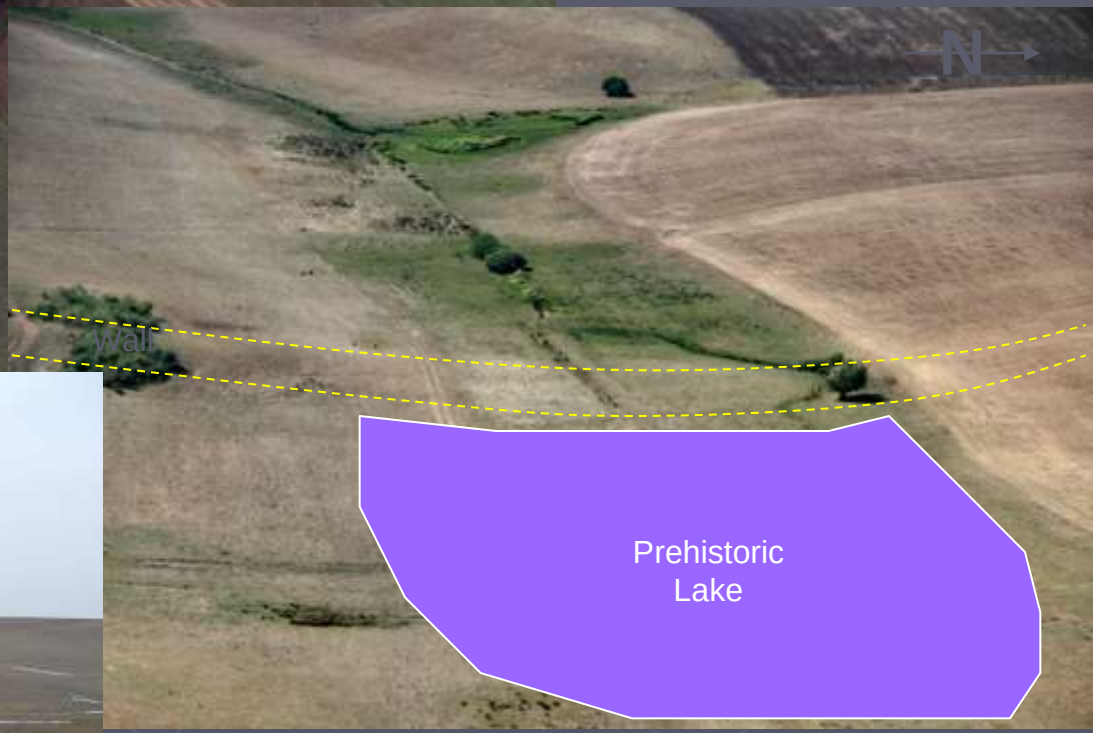
- Example: Hunedoara Timisana, Arad County, 19th century villa
- Example: Cornesti, Timis County, post station

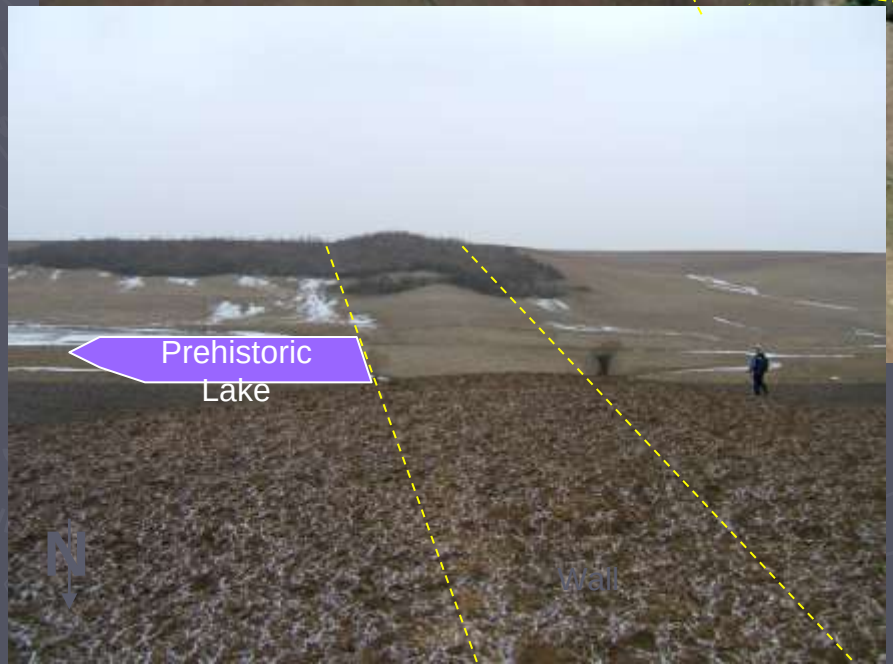
5. Tumular mounds

- Example: Turnu, Arad County, tumular mound

- Example: Nerau, Timis County, tumular mounds

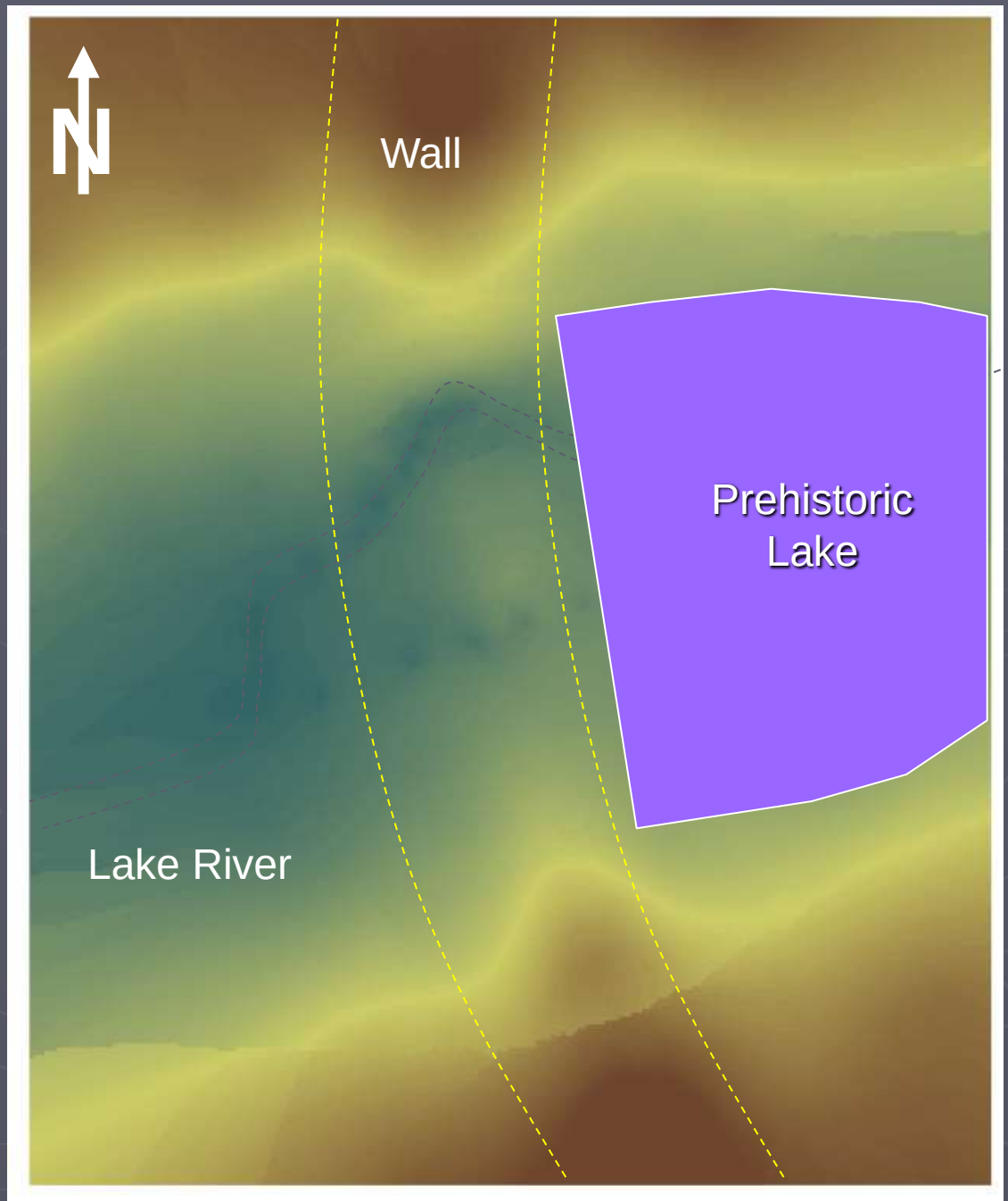






- Example: Cornesti, Timis County, a prehistoric anthropic lake

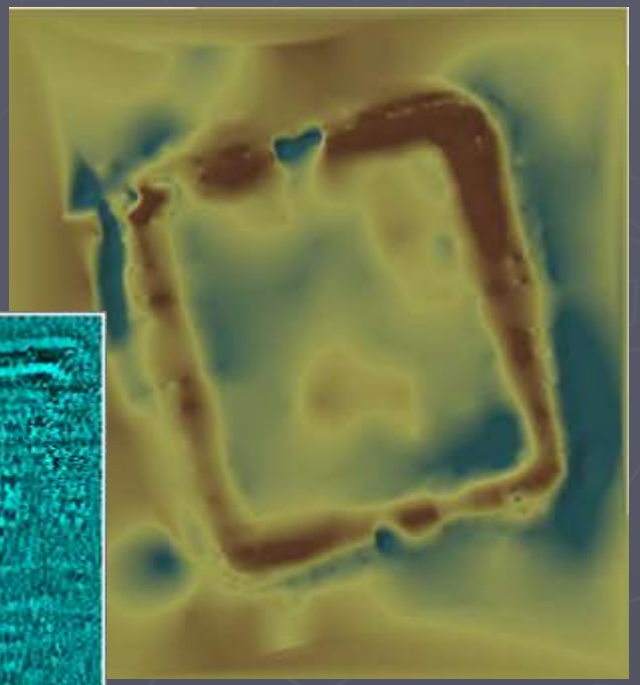
- Example: Cornesti, Timis County, a prehistoric anthropic lake (topographic render)



Data corroboration

- Satellite images

- Topographic measurements



Case study: Varadia, Caras-Severin County, Roman castrum

- Geophysical prospections

Results

- 350 new archaeological sites identified mainly using satellite images, over 50 of them have a cultural and historic national value
- The re-actualization of the List of Historic Monuments of Timiş County, Archaeology Section
- The creation of a database useful to both specialists and also to population regarding the archaeological potential of Timis County and of the S-W part of Banat region
- Topographical measurements and mapping of archaeological sites for a better archaeological heritage management