



## ERT AND MAGNETOMETRY SURVEYING OF A ~500-1532 CE MANTEÑO CULTURE ARCHEOLOGICAL SITE CLOSE TO PUERTO LOPEZ, ECUADOR

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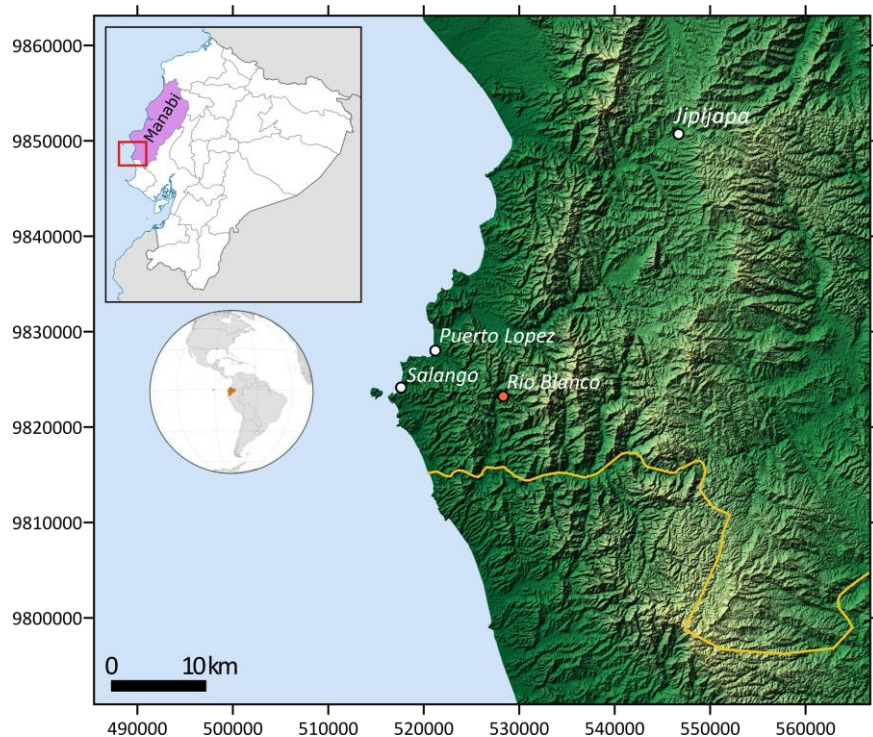
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# MANTEÑO CULTURE 500 CE TO 1532 CE

One of the largest unexcavated archeological remains known in Ecuador



Matthew Helmer,/NGS.



E. Avilés

Manteño Culture, U-shaped seat

E. Avilés

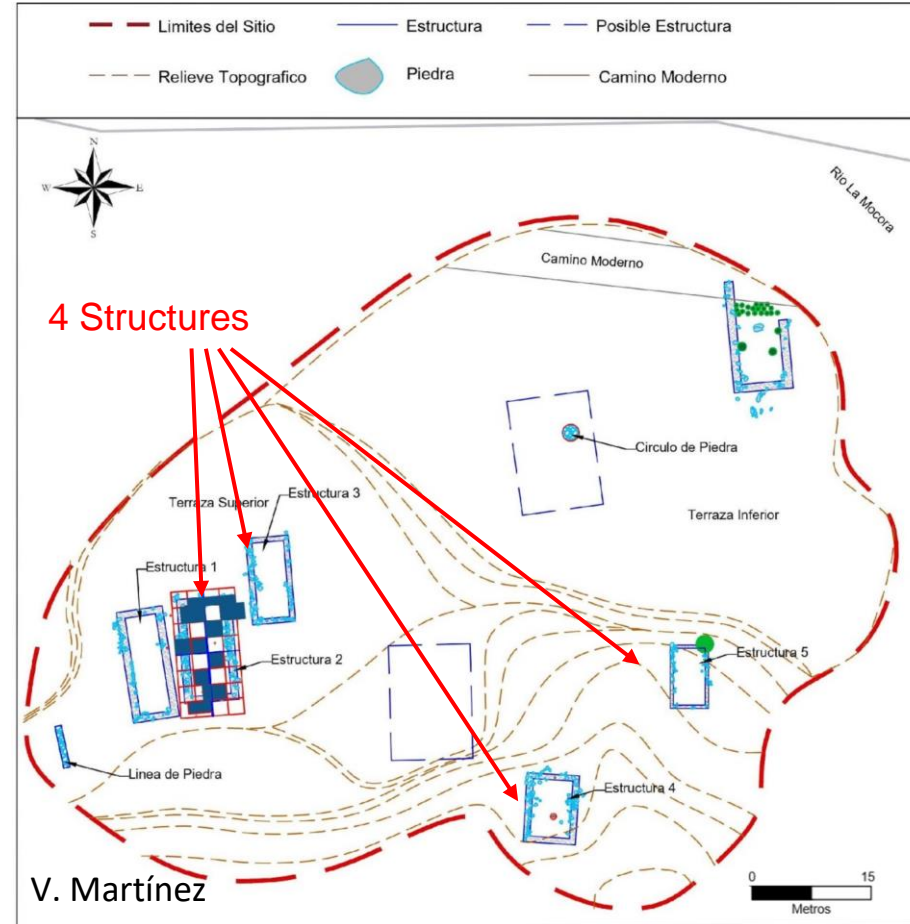


Manteña mask made with gold sheets

# STONE-WALLED STRUCTURES ON ALLUVIAL TERRANES



Rio Blanco river valley

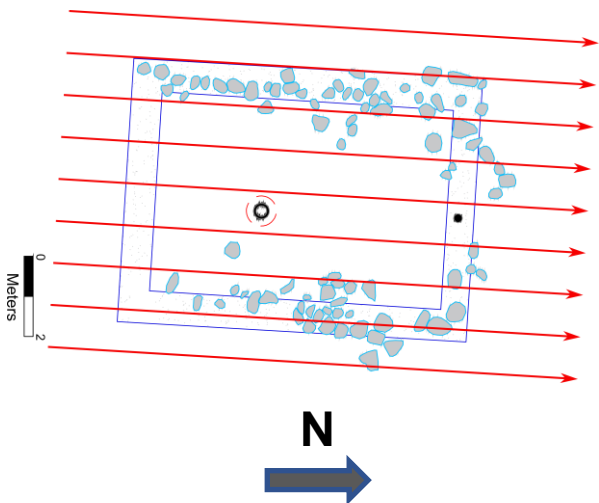
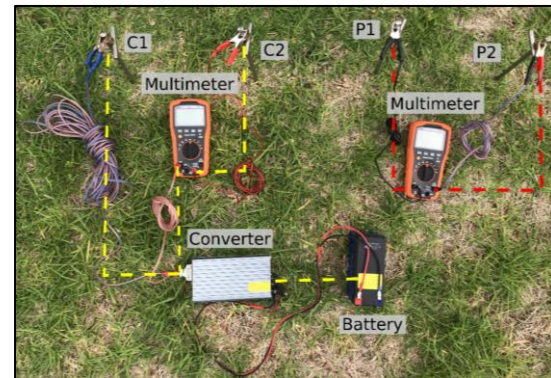


Archeological site N4C4-086



# MAGNETOMETRY AND ERT

- Geometrics proton-precession magnetometer model G-856AX
- Garage-build ERT equipment



0.5 m x 1 m grid size

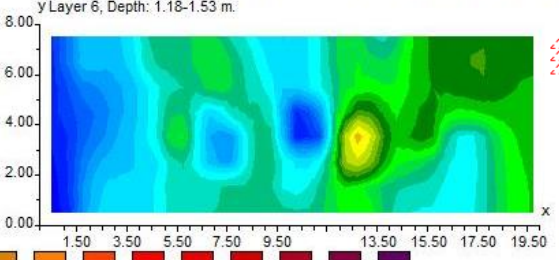
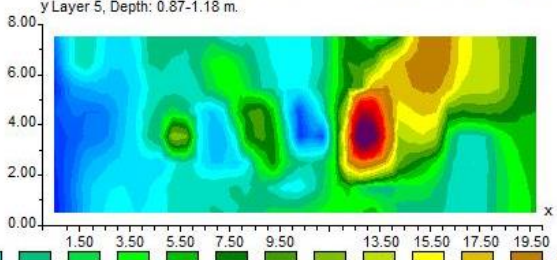
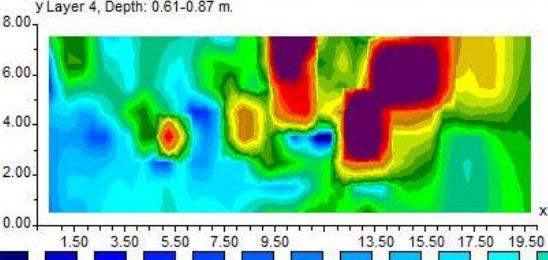
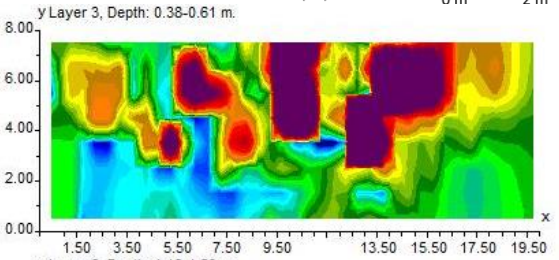
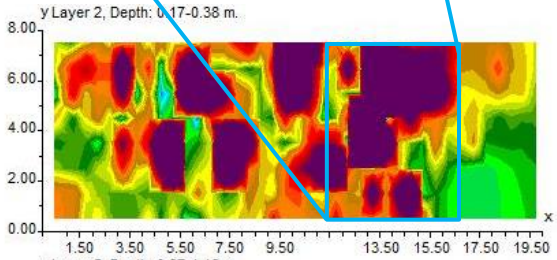
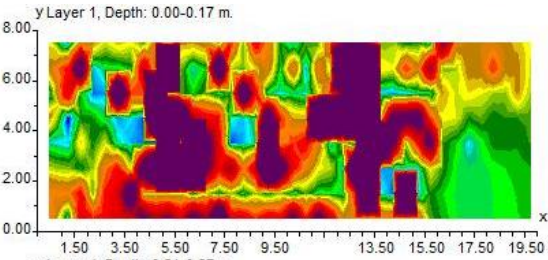
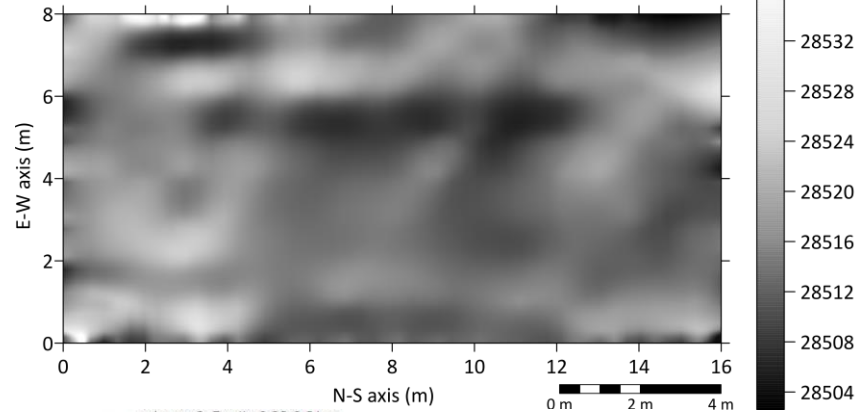
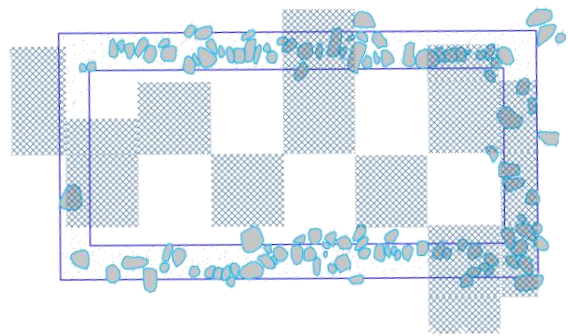


# STRUCTURE 2

→ North

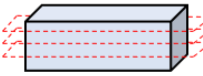
Magnetometry

Total magnetic field strength (nT)

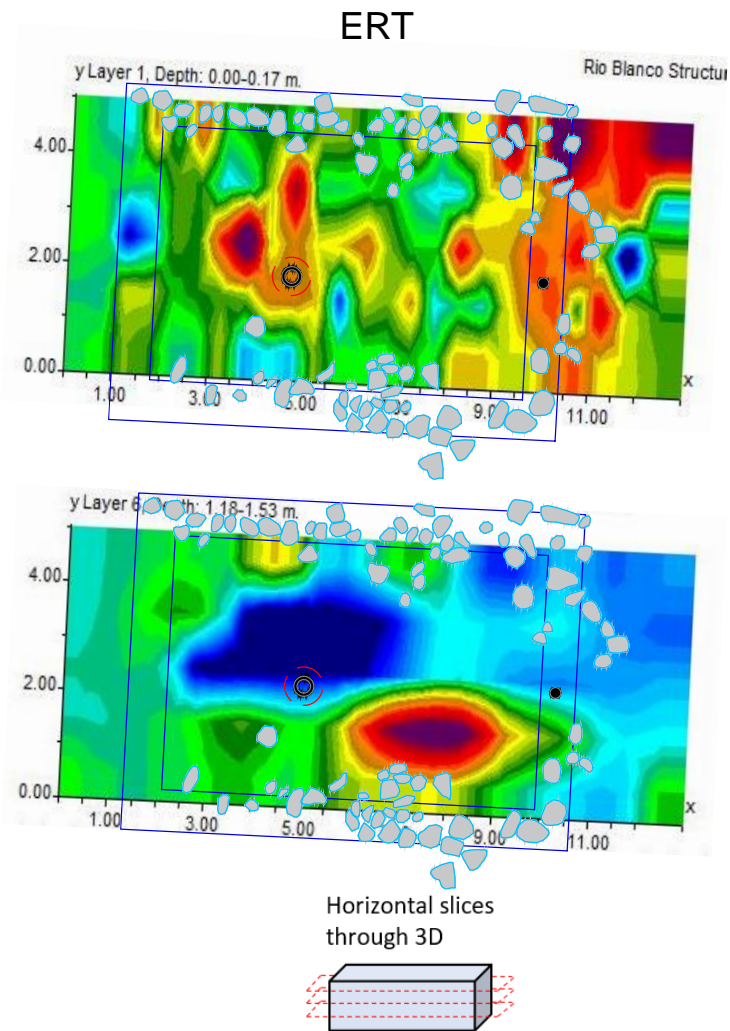
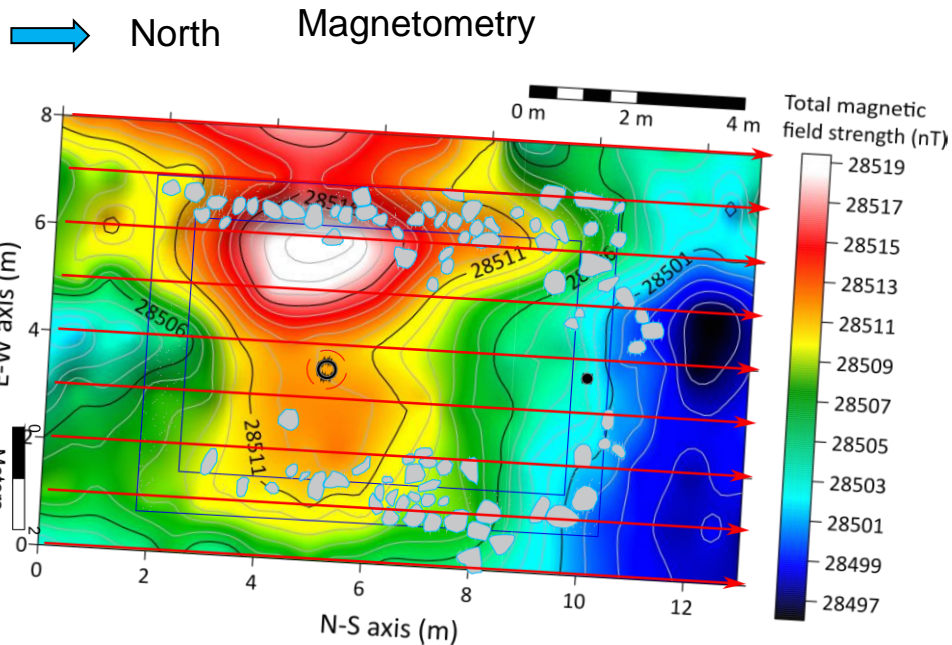


ERT

Horizontal slices through 3D



# STRUCTURE 4

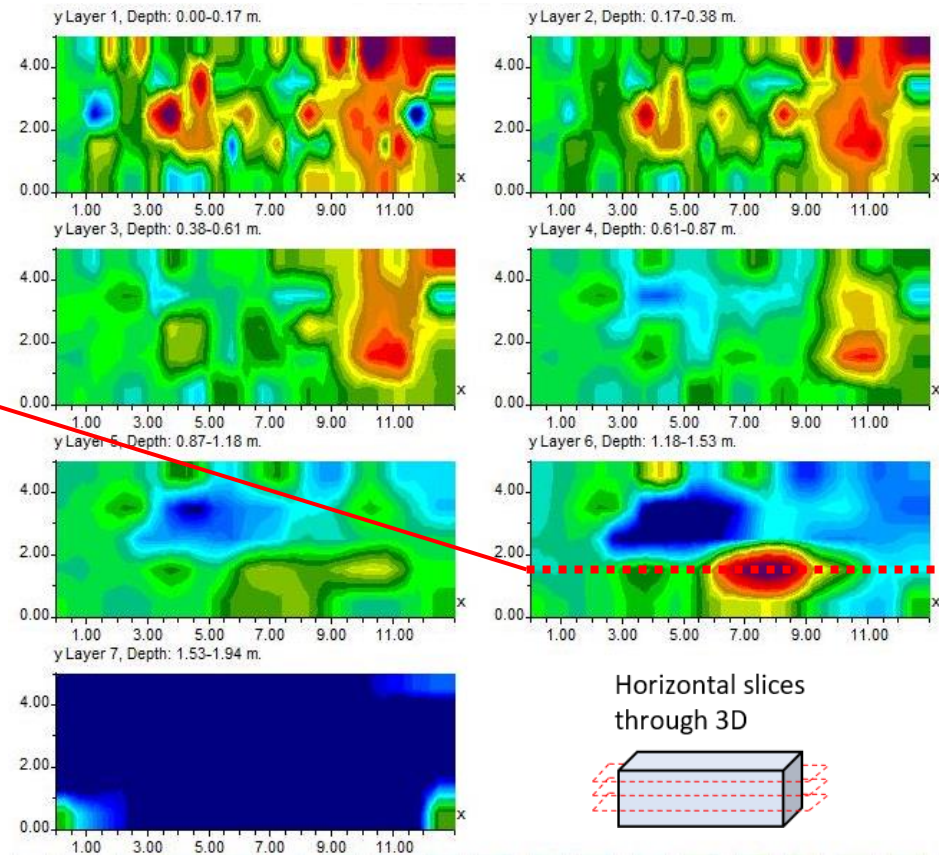
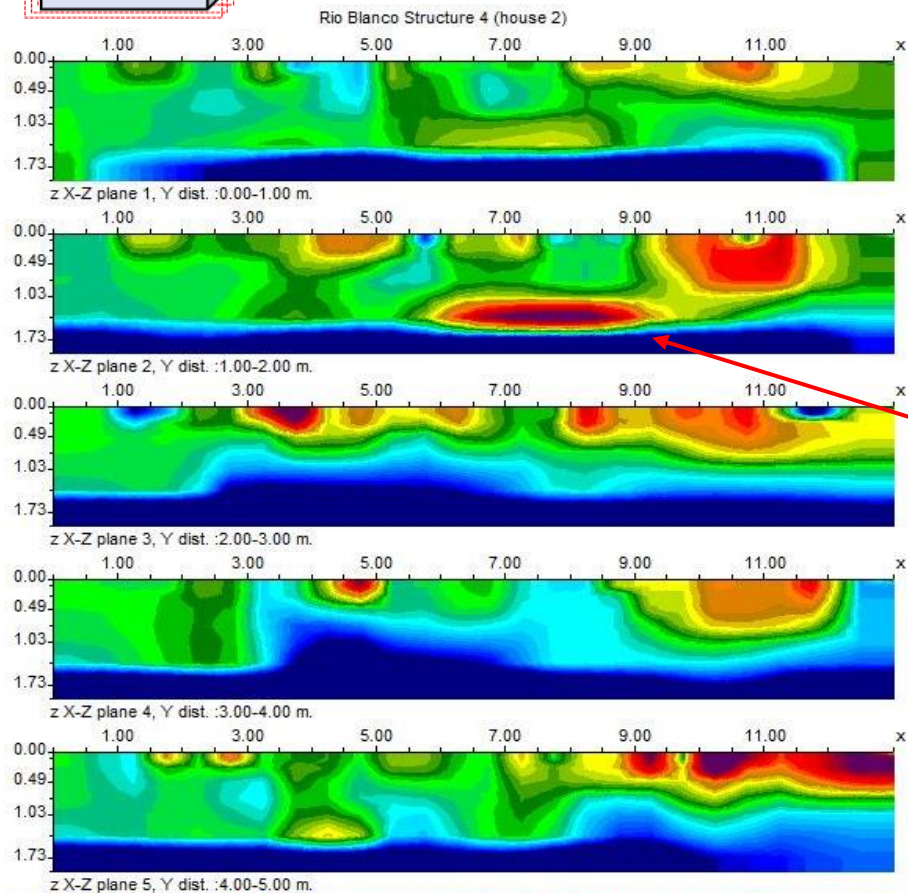




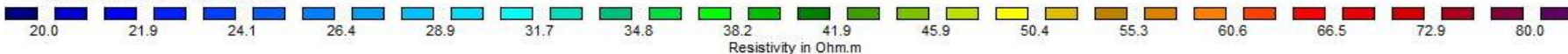
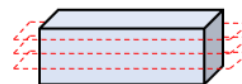
Vertical slices through 3D

# STRUCTURE 4 - ERT

North



Horizontal slices  
through 3D



X Unit Electrode Spacing 0.500m. Y Unit Electrode Spacing 1.000m. Iteration 8 data misfit 5.16%



# CONCLUSIONS AND FUTURE WORK

- All tested structures showed internal variations related to differences in electrical resistivity and magnetic susceptibility, with the two bigger structures showing more features.
- According to our preliminary interpretation, some of these anomalies are from the **wall rocks**, locations of **kitchen area** and **fireplaces**, and maybe even **burials**.
- Even finer sampling grids would be desirable, or use of a gradiometer.
- Excavations on selected targets to verify.



# THANK YOU!

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