Technological advances in the study of the human past

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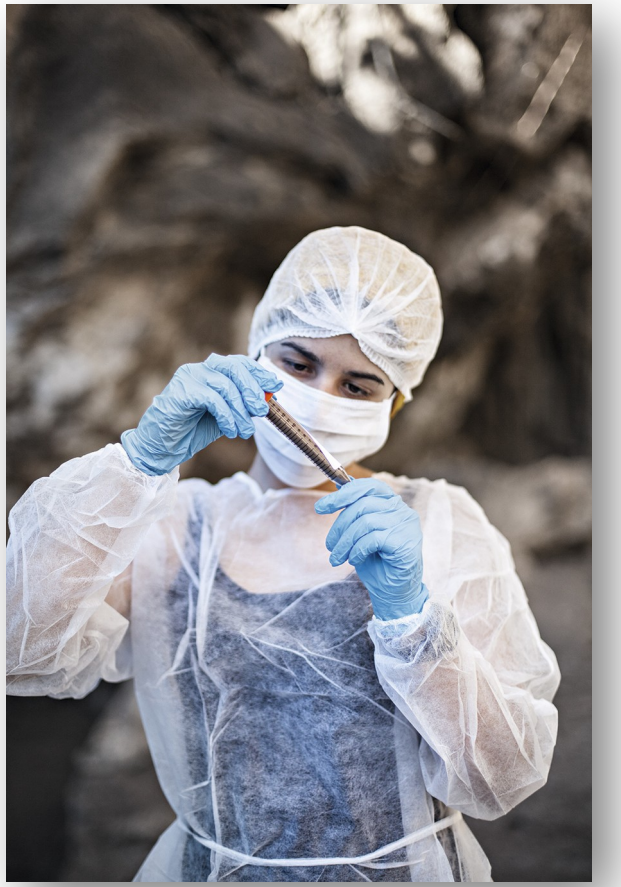
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Archaeology: the science of the human past



Excavation at Lapa do Santo rockshelter – LAAAE collection

Archaeological science in the Global South by the Global South



LAAAE collection



LAAAE collection

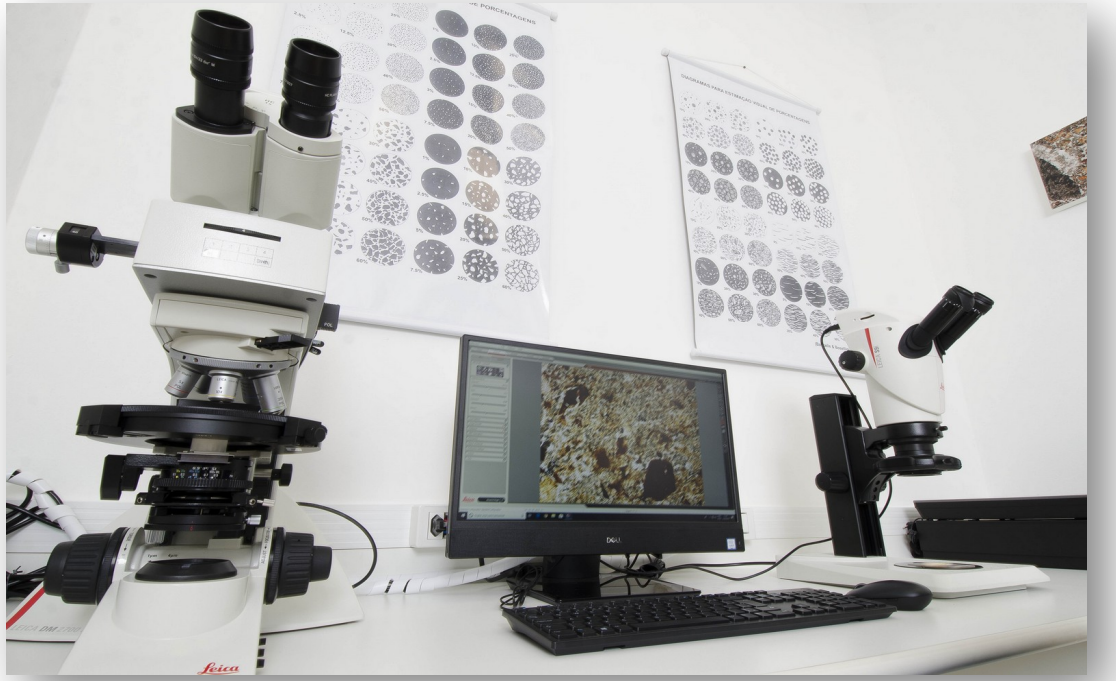
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Museum of Archaeology and Ethnology University of Sao Paulo

- 3 research areas
  - Archaeology
    - Brazilian archaeology
    - Mediterranean archaeology
  - Ethnology
    - South American ethnology
    - African ethnology
  - Museology
- 21 professors
- Graduate programs in Archaeology (Ms. And PhD) and Museology (Ms.)
- International partnerships
- Co-tutelle agreements
- 12 thematic laboratories
- 4 analytical labs
  - Microarchaeology – LabMicro
  - Archaeogenetics and virtual anthropology – LAAAE
  - Tropical archaeology – Arqueotrop
  - Zooarchaeology and bioarchaeology - LEZB

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Microarchaeology laboratory - LabMicro



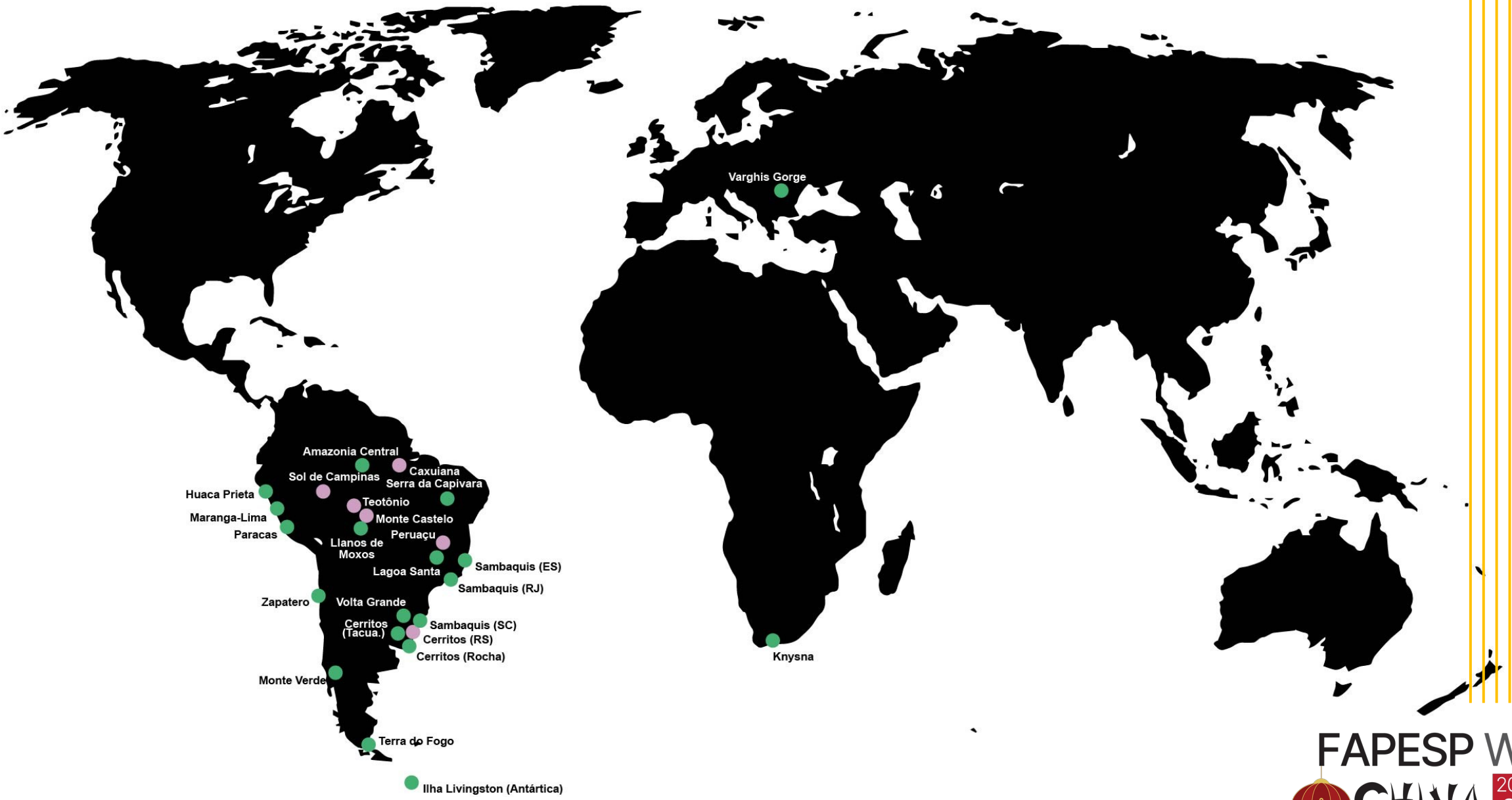


LabMicro

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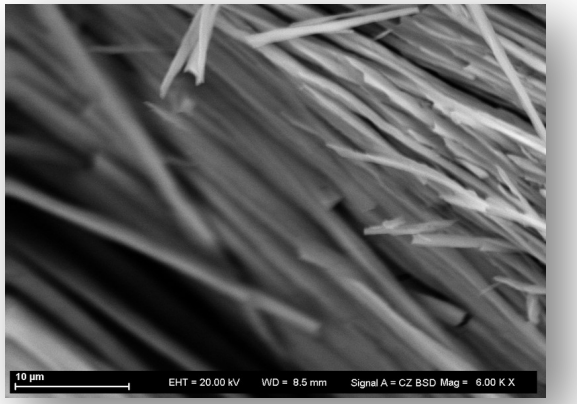
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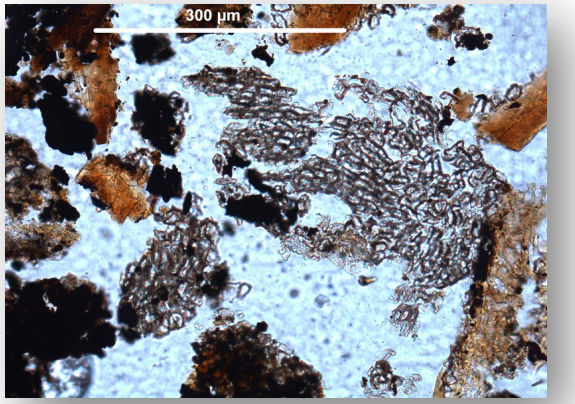
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Microarchaeology (Weiner 2010)

- Archaeological record attainable through the use of instruments
- Integration of the <u>microscopic</u> record to archaeological studies
- Examine the archaeological record at high resolution





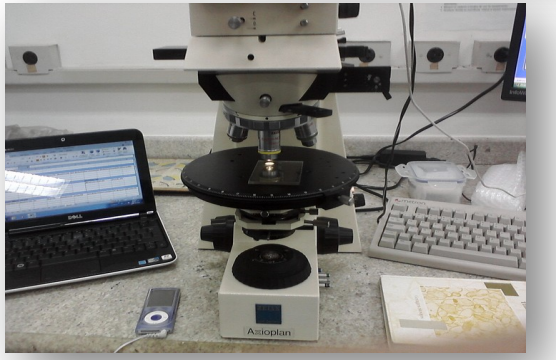


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Micromorphology



- Essential to understand site formation processes
  - Use
  - Preservation
  - Alteration



- History of archaeological sites

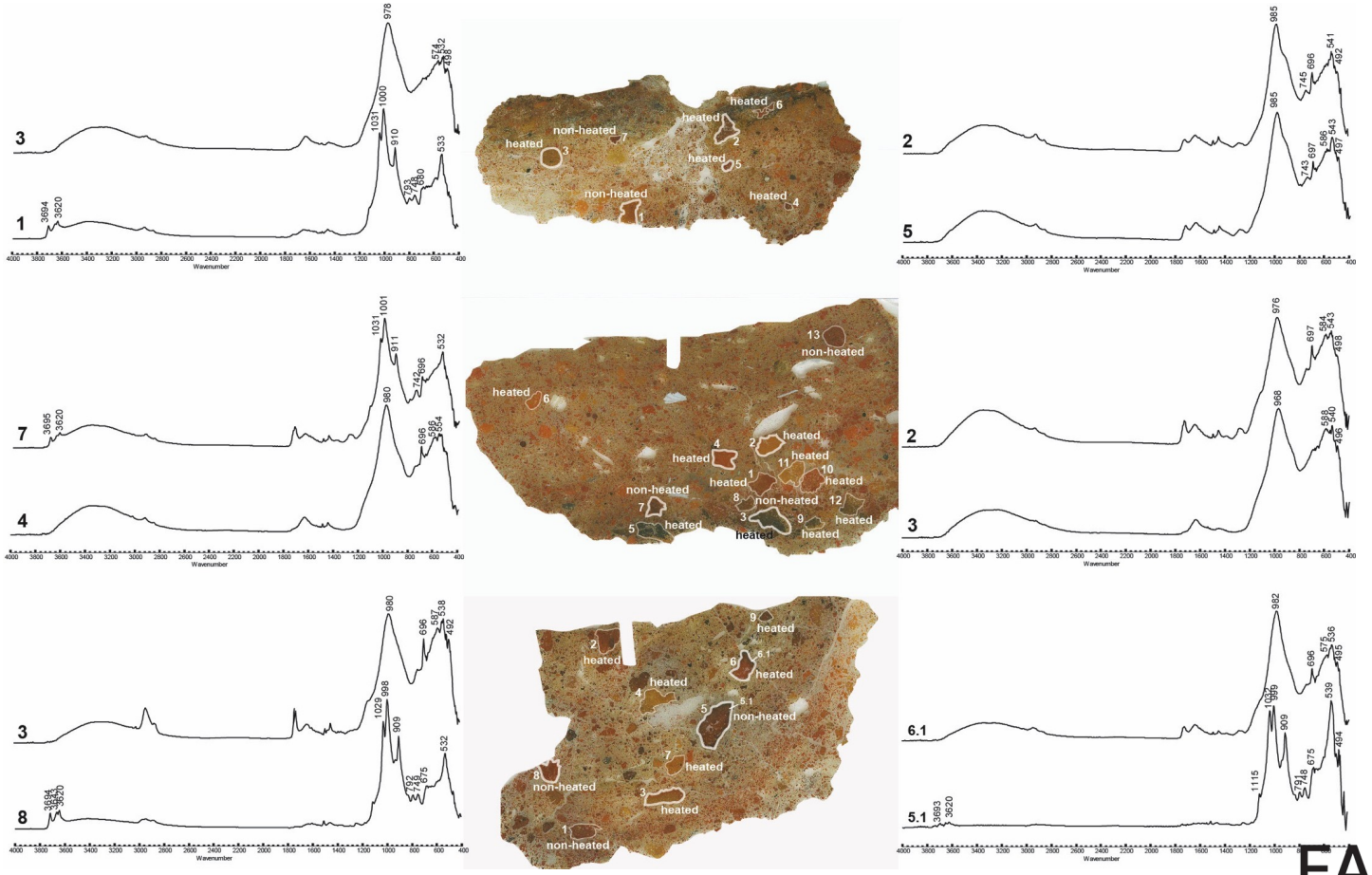


- Human-landscape interactions

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Fourier transform infrared spectroscopy - FTIR





Villagran et al. 2016

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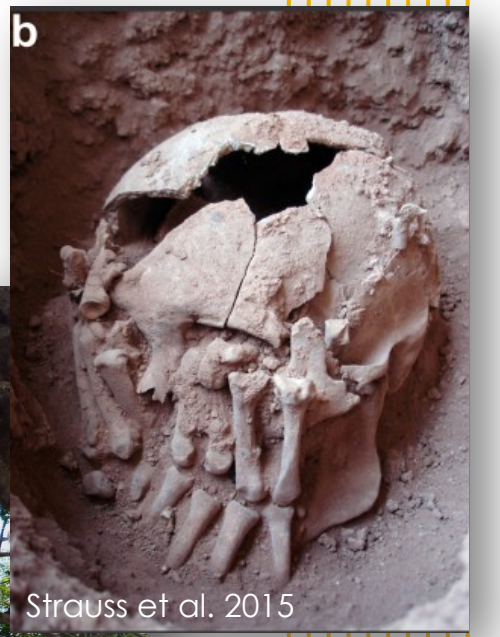
Paleoindian rockshelters



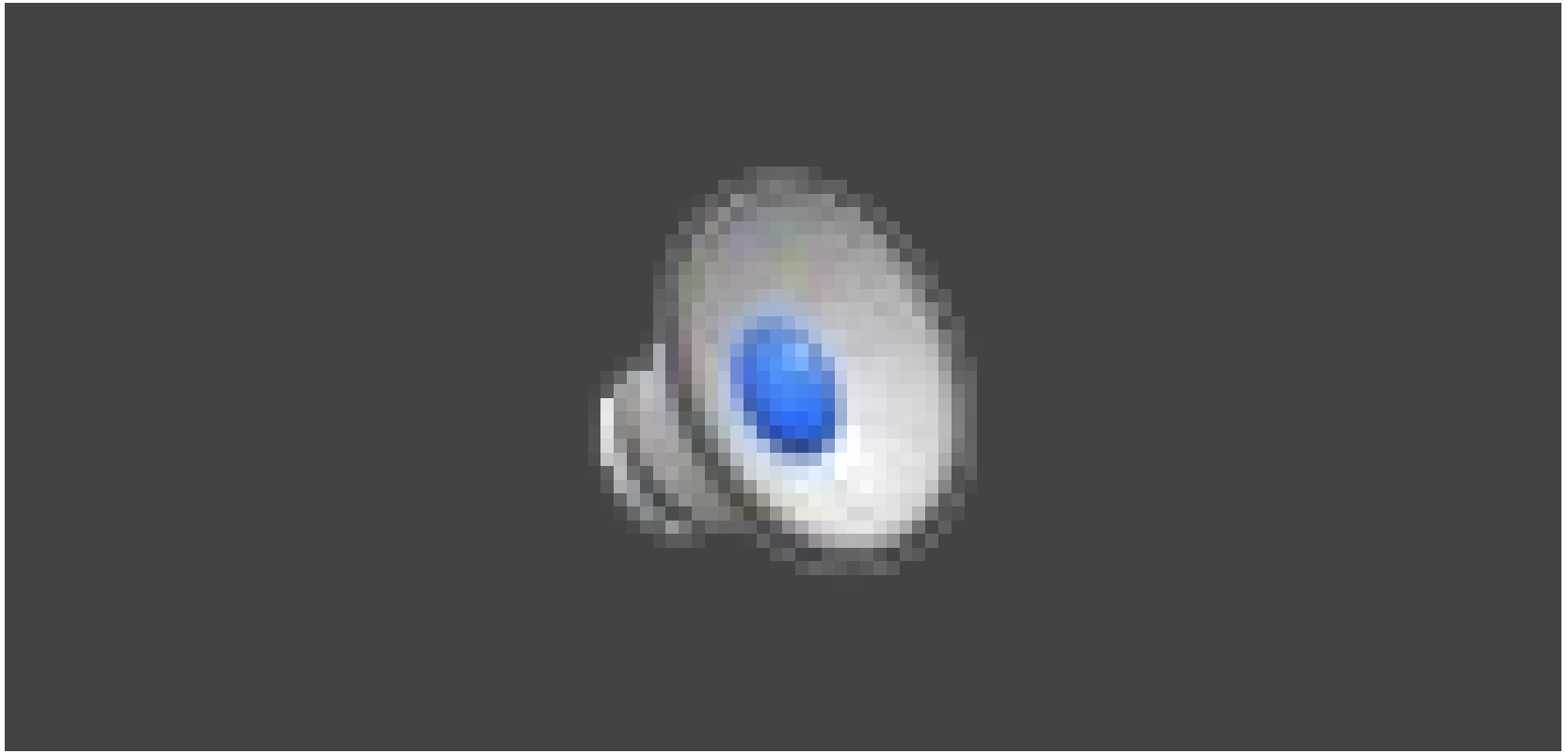
Lapa do Santo rockshelter – Central Brazil



Lapa do Santo rockshelter – Central Brazil



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Adapted from Nimuendaju 1956

Coastal shellmounds “sambaquis”



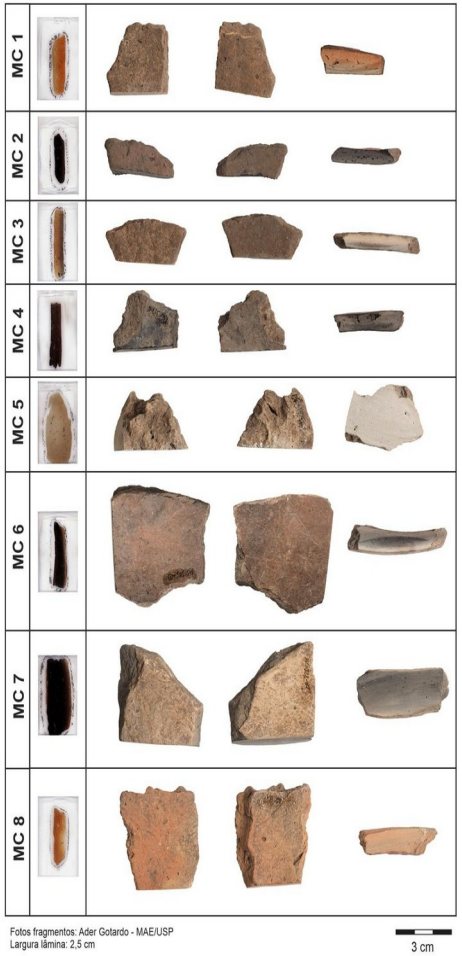
Santa Marta – Southern Brazil



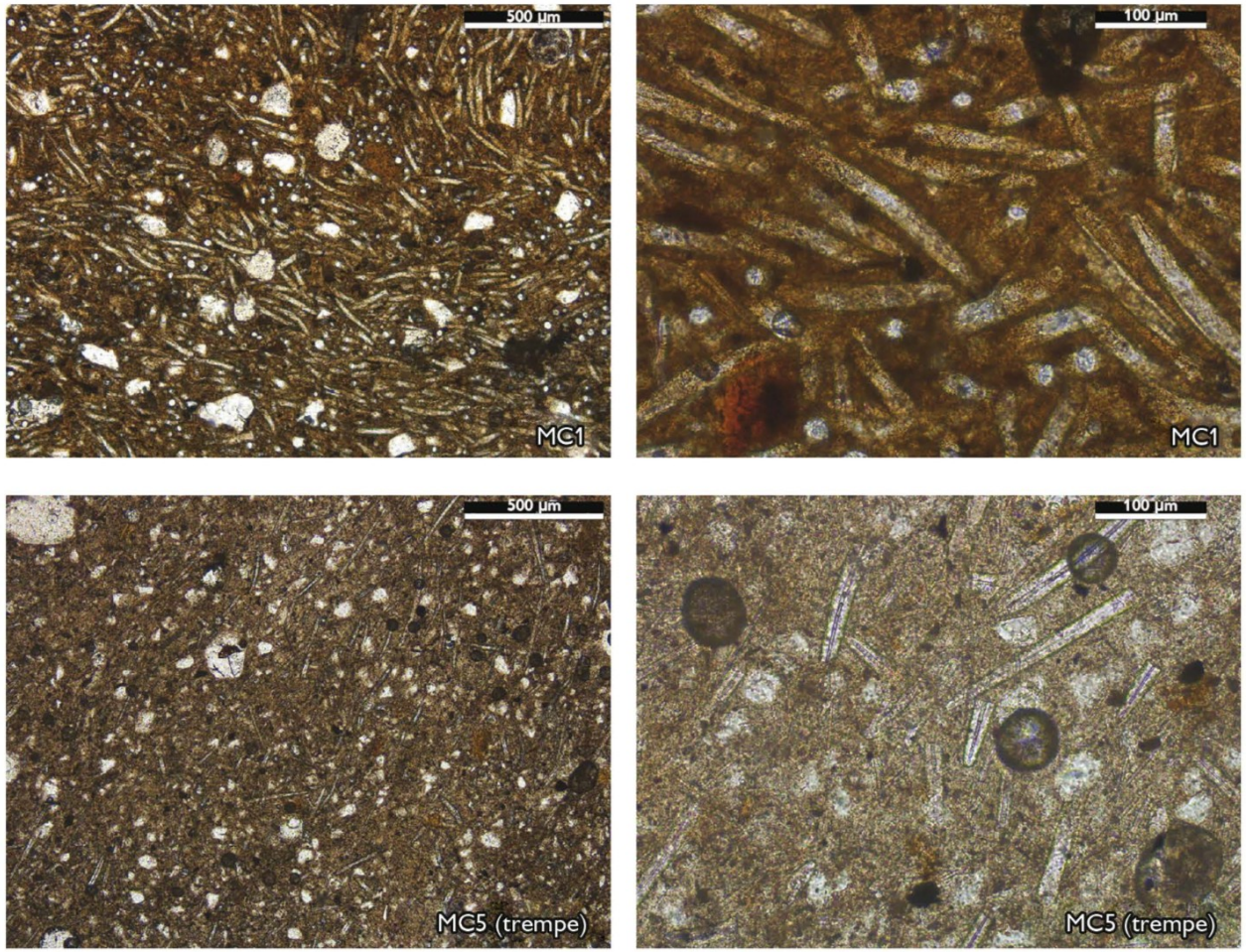
Ipoã – Southern Brazil

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Petrography of Amazonian pottery



Villagran et al. (2022)



Villagran et al. (2022)

GERDA HENKEL STIFTUNG

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Andean architecture



Maranga-Lima complex - Peru





PUCP

Prof. Rafael Vega-Centeno

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Amazonian architecture



La Punta – Boliva (courtesy of Eduardo Neves)

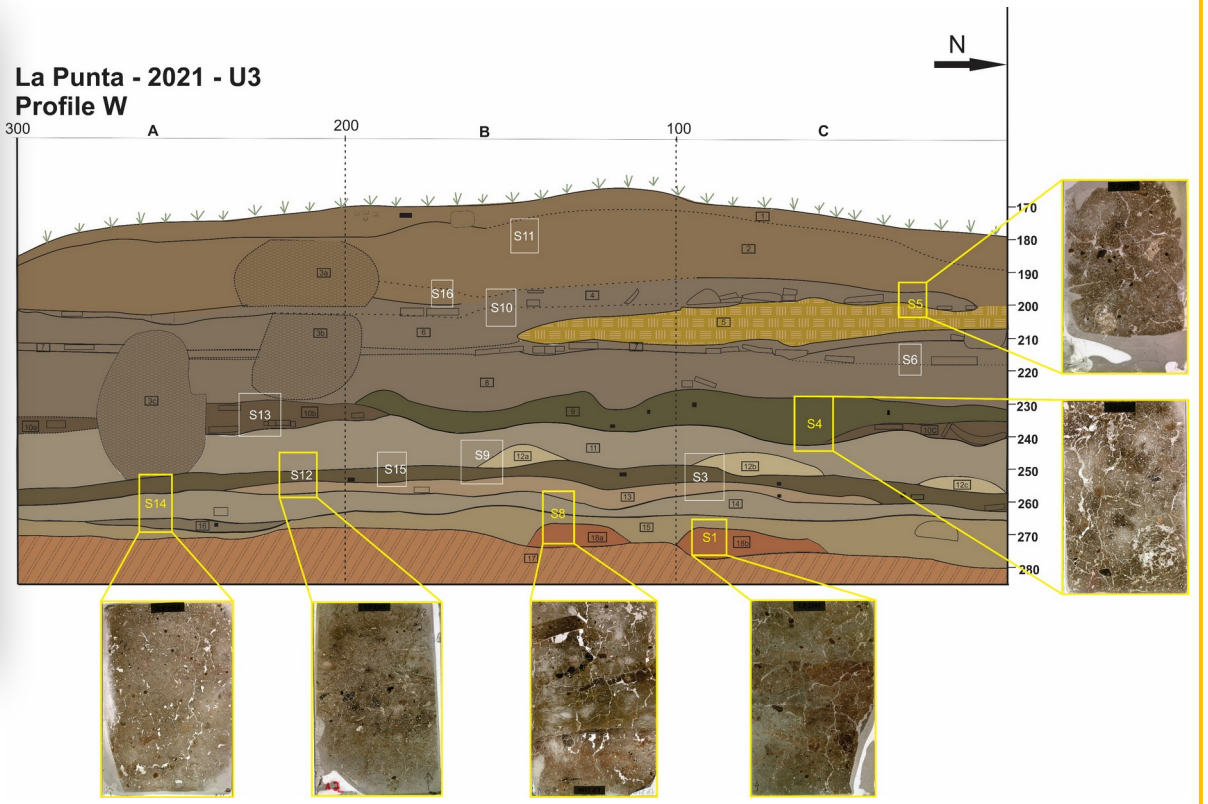


Image: Kelly Brandão

UNIVERSITÄT BONN

Prof. Carla Jaimes Betancourt

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Human settlements in Antarctica





Sealer 4 site – Livingston Island

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LEACH

Prof. Andres Zarankin

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Laboratory of Archaeogenetics and Virtual Anthropology - LAAAE





Prof. André Strauss
Director LAAAE

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First ancient DNA laboratory in Brazil









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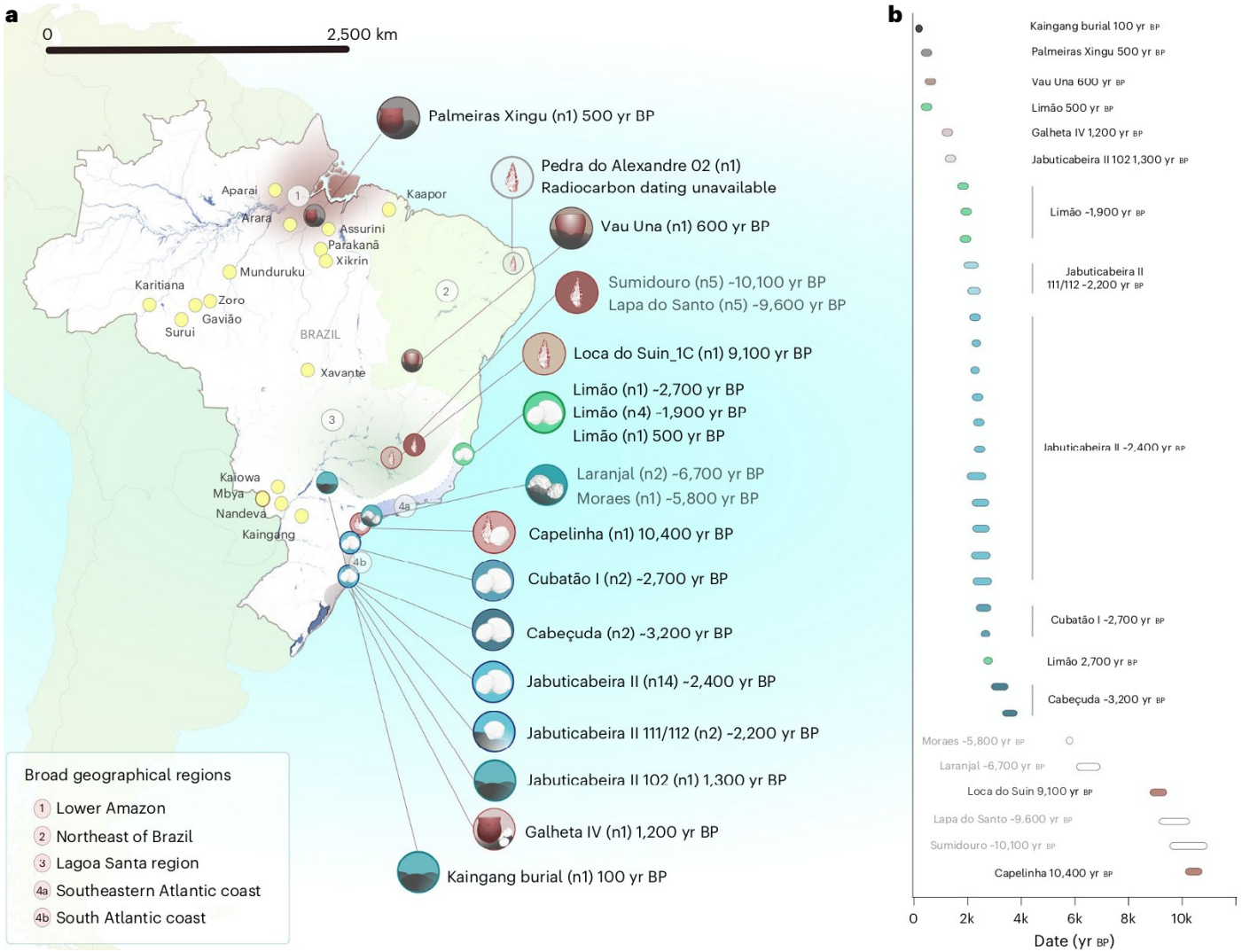
Photographs: LAAAE collection

nature ecology & evolution

Article

https://doi.org/10.1038/s41559-023-02114-9

Genomic history of coastal societies from eastern South America



Ferraz et al. 2023

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Virtualization of museum collections







Photographs: LAAAE collection

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Laboratory of Tropical Archaeology - Arqueotrop





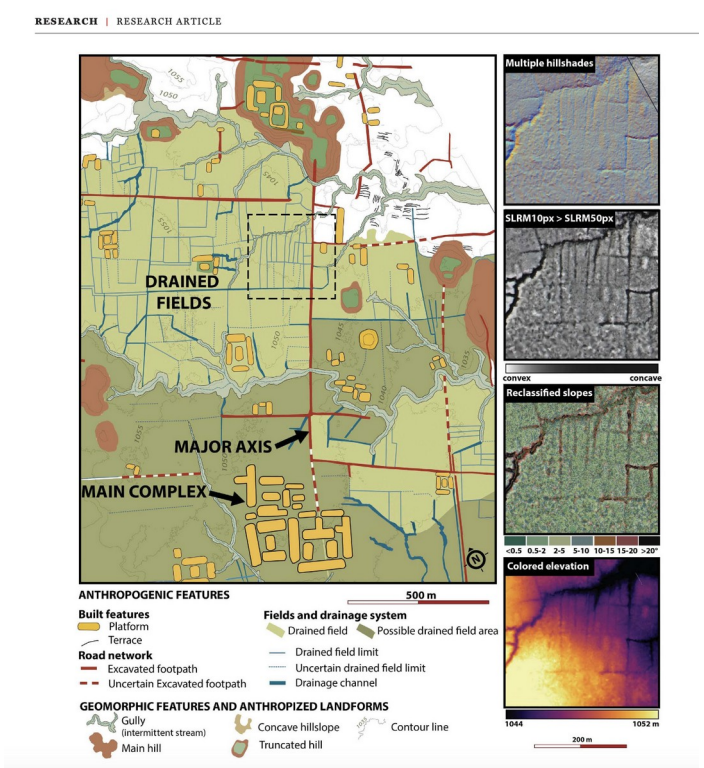
Prof. Eduardo Neves
Director - Arqueotrop

ARQUEOTROP
laboratório de arqueologia dos trópicos

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Rostain et al. 2024

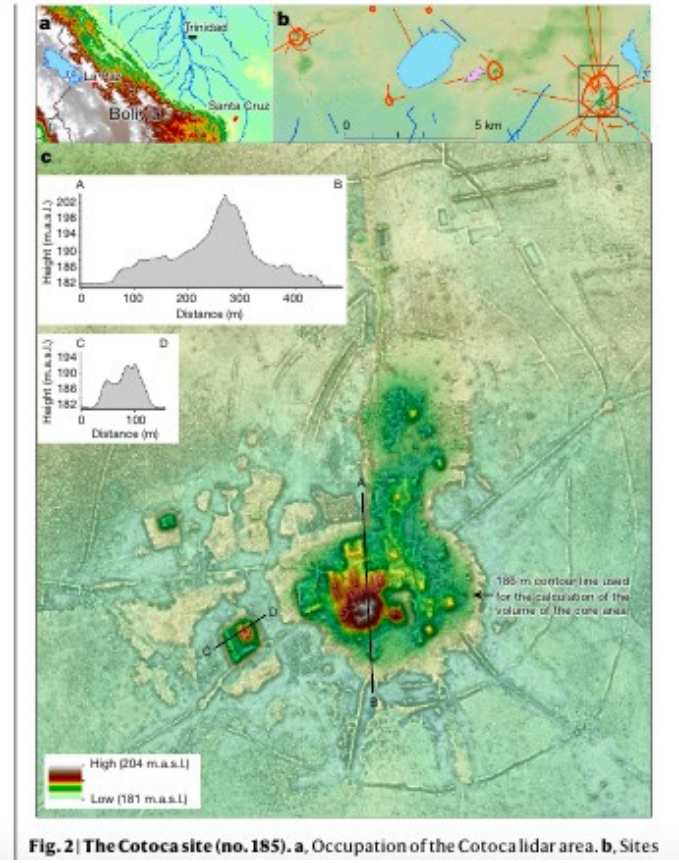


Fig. 2 | The Cotoca site (no. 185). a, Occupation of the Cotoca lidar area. b, Sites

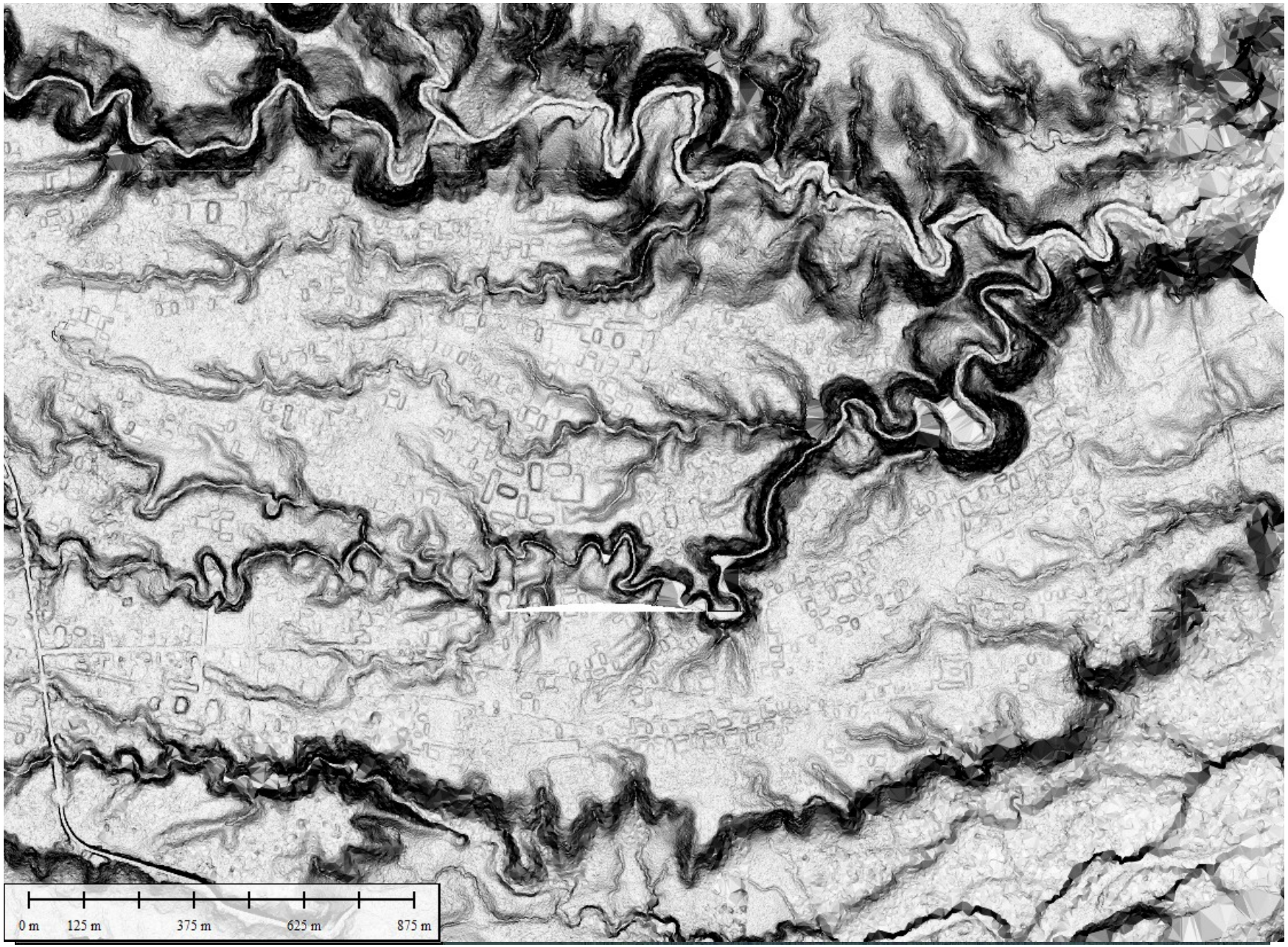
Article

Lidar reveals pre-Hispanic low-density urbanism in the Bolivian Amazon

https://doi.org/10.1038/s41586-022-04780-4
Heiko Prümers[1✉], Carla Jaimes Betancourt[2], José Iriarte[3], Mark Robinson[3] & Martin Schaich[4]

Prümers et al. 2022

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Lidar Image, Kunguintsse, Upano basin, Ecuador (courtesy of R. Alvarez Ol.Wohlfson and Eduardo G. Neves)

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AMAZÔNIA REVELADA

NATIONAL GEOGRAPHIC

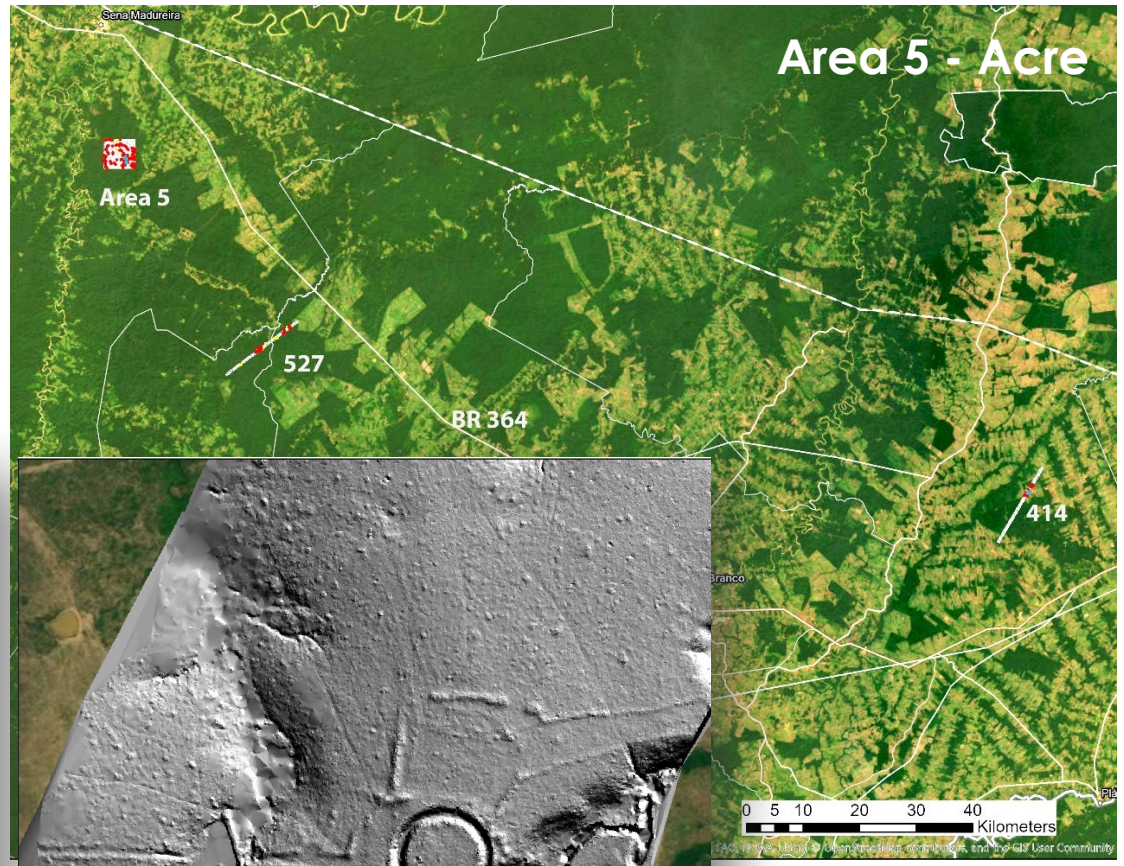


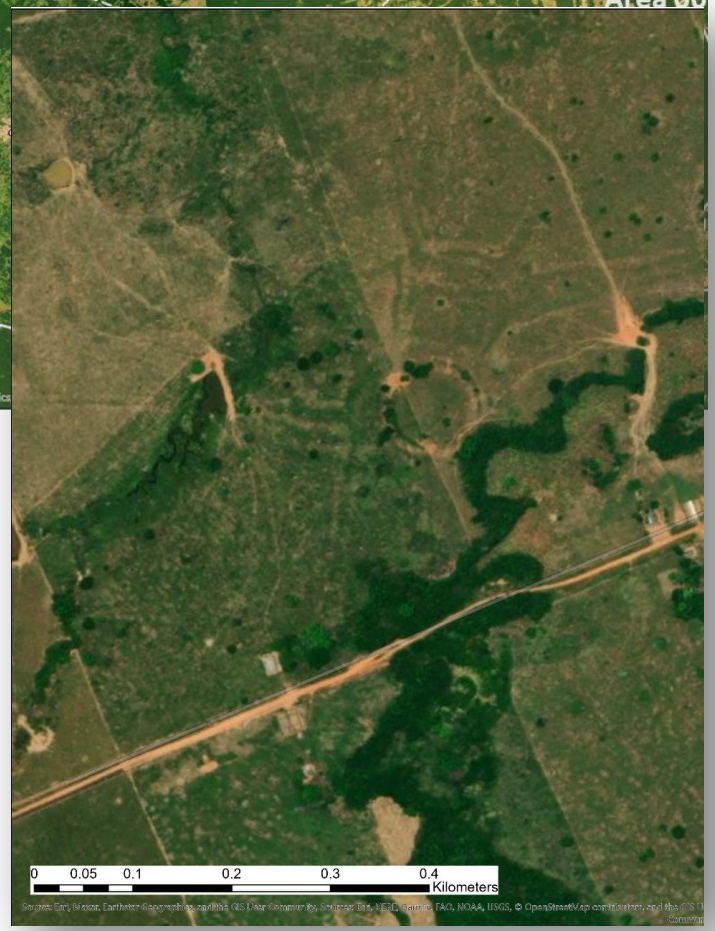


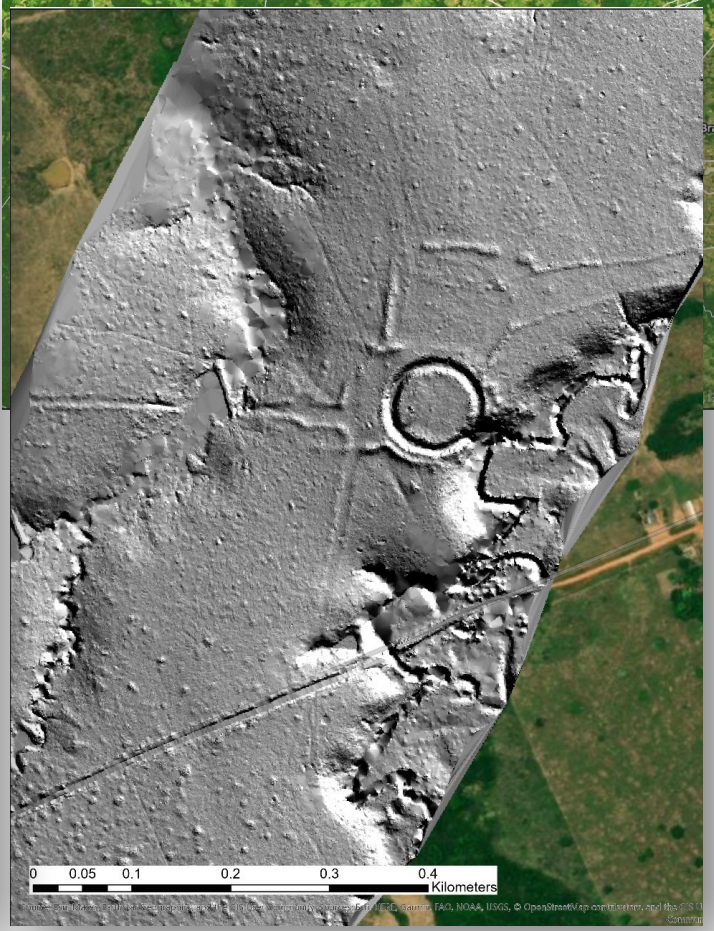
Image courtesy of Eduardo G. Neves

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Images courtesy of Eduardo G. Neves

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Archaeological science in the global south by the global south



- Locally-grounded research
- Decolonization of archaeological research through technological and scientific independence
- Bulding sustainable research networks based on the training of local human resources
- Strengthening of research partnerships within the global south



Thank you!

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