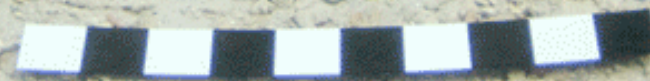


# Maritime Cultural Heritage and Blue Growth: What's the Connection? **Underwater technology**

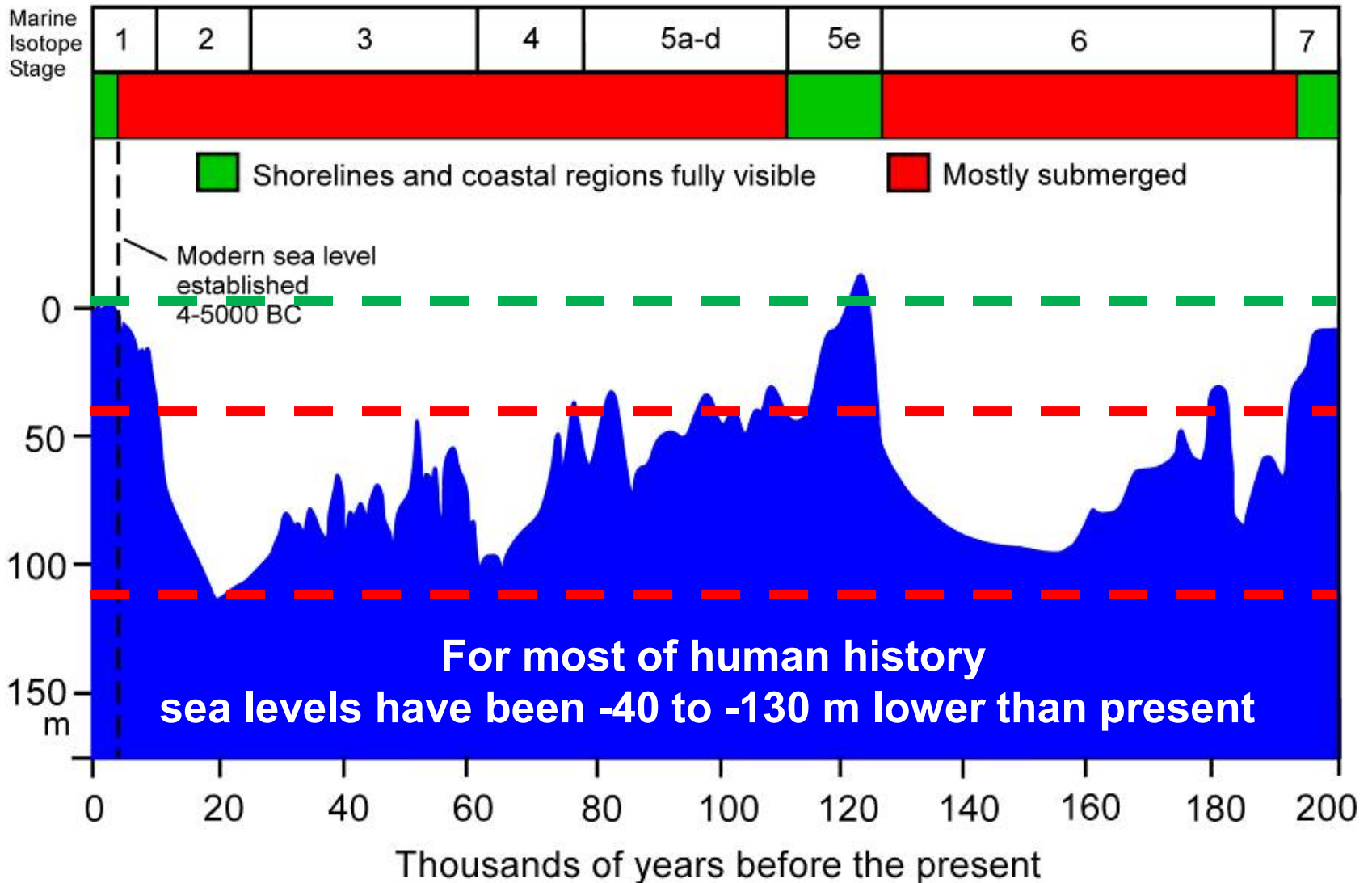
Dr Dimitris Sakellariou  
Structural Geologist  
Hellenic Centre for Marine Research



Pavlopetri  
South Greece

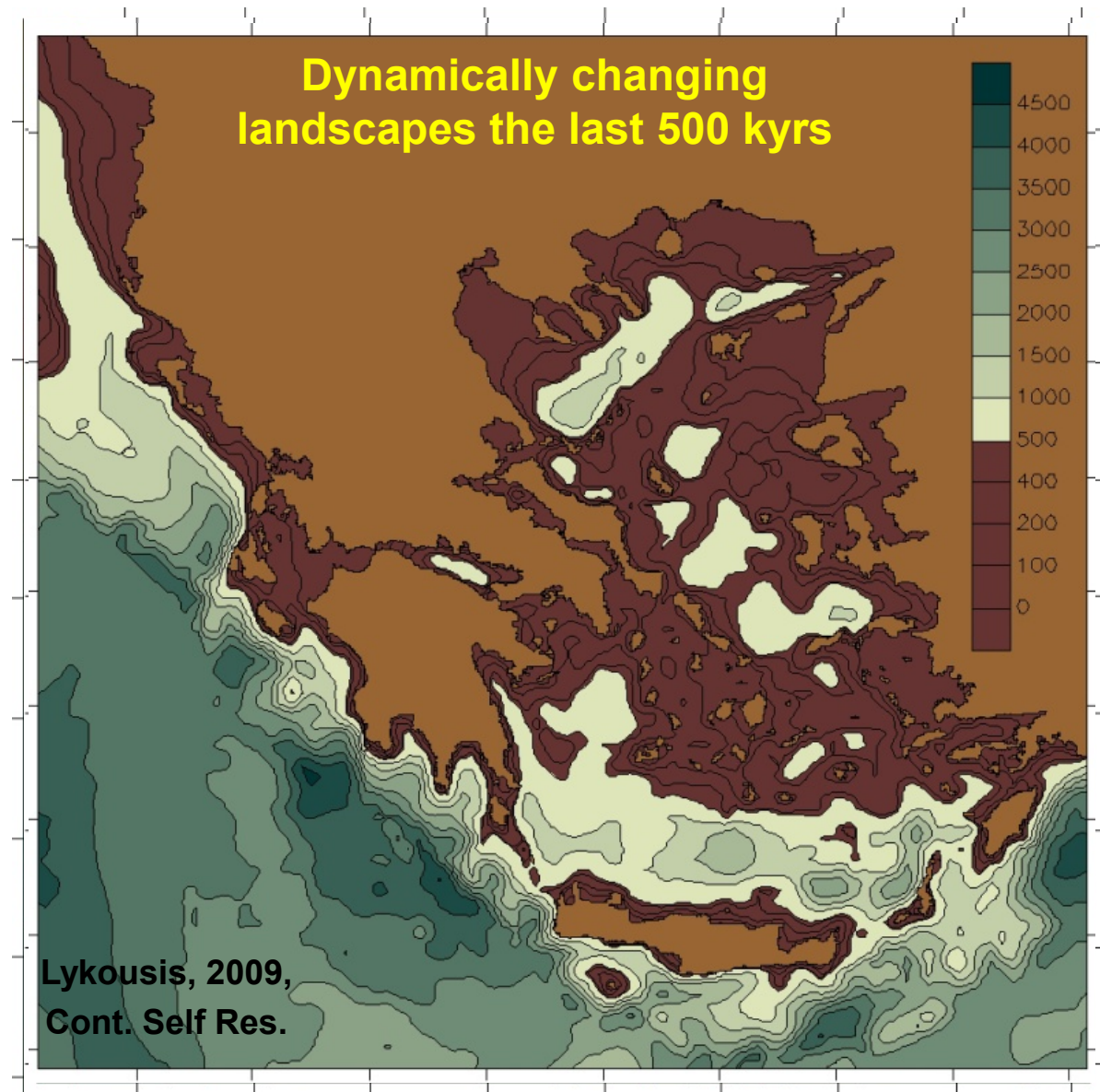
# Eustatic sea-level fluctuations

Deep-sea isotope records of sea level change



# Sea-level fluctuations + isostasy + vertical tectonics

- OIS 2,  
18-30kyrs**
- OIS 6,  
140-180kyrs**
- OIS 8,  
250-300kyrs**
- OIS 10 & 12,  
350-480kyrs**



# Research vessels



**AEGAEO**



**ALKYON**

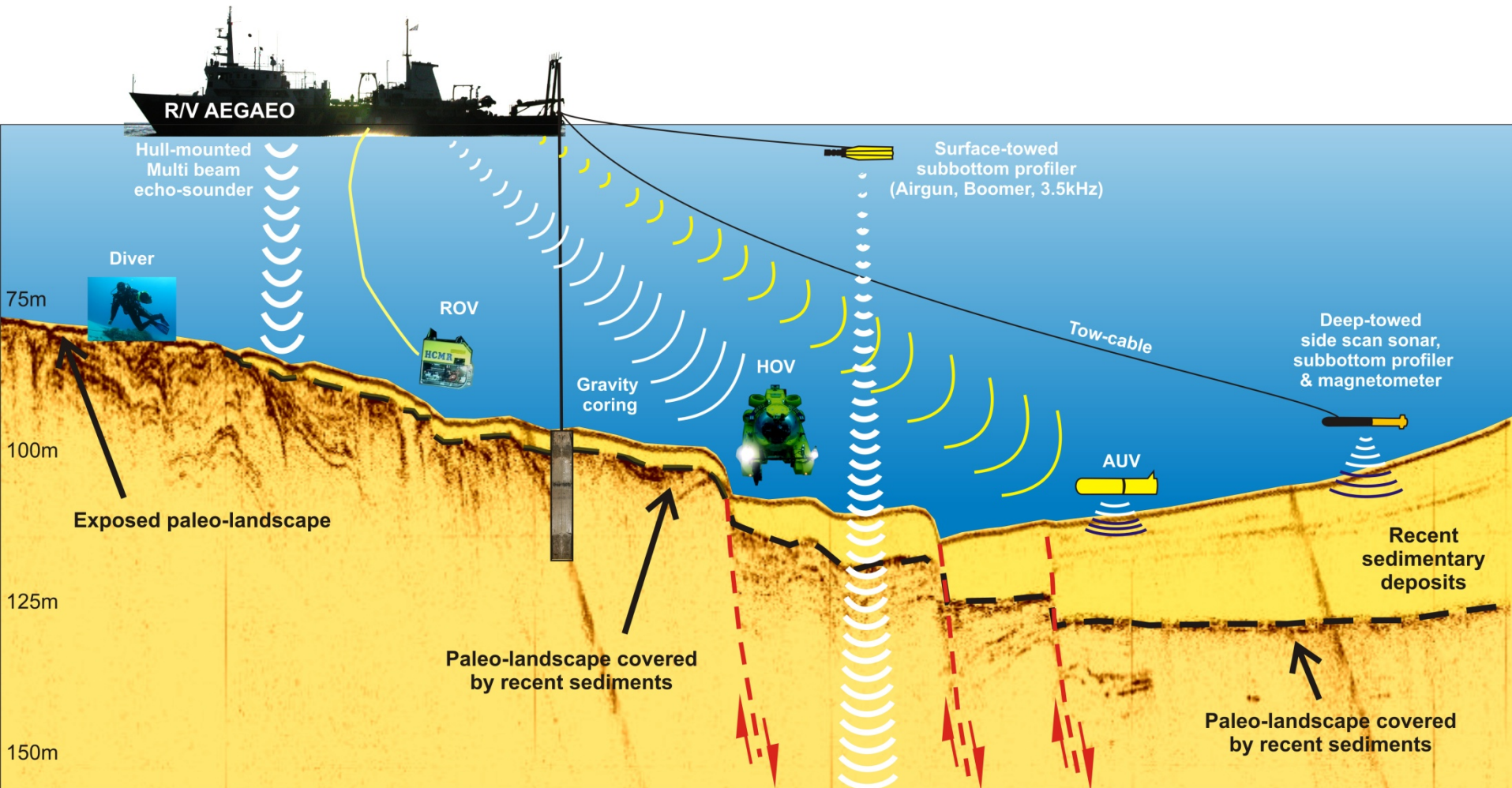


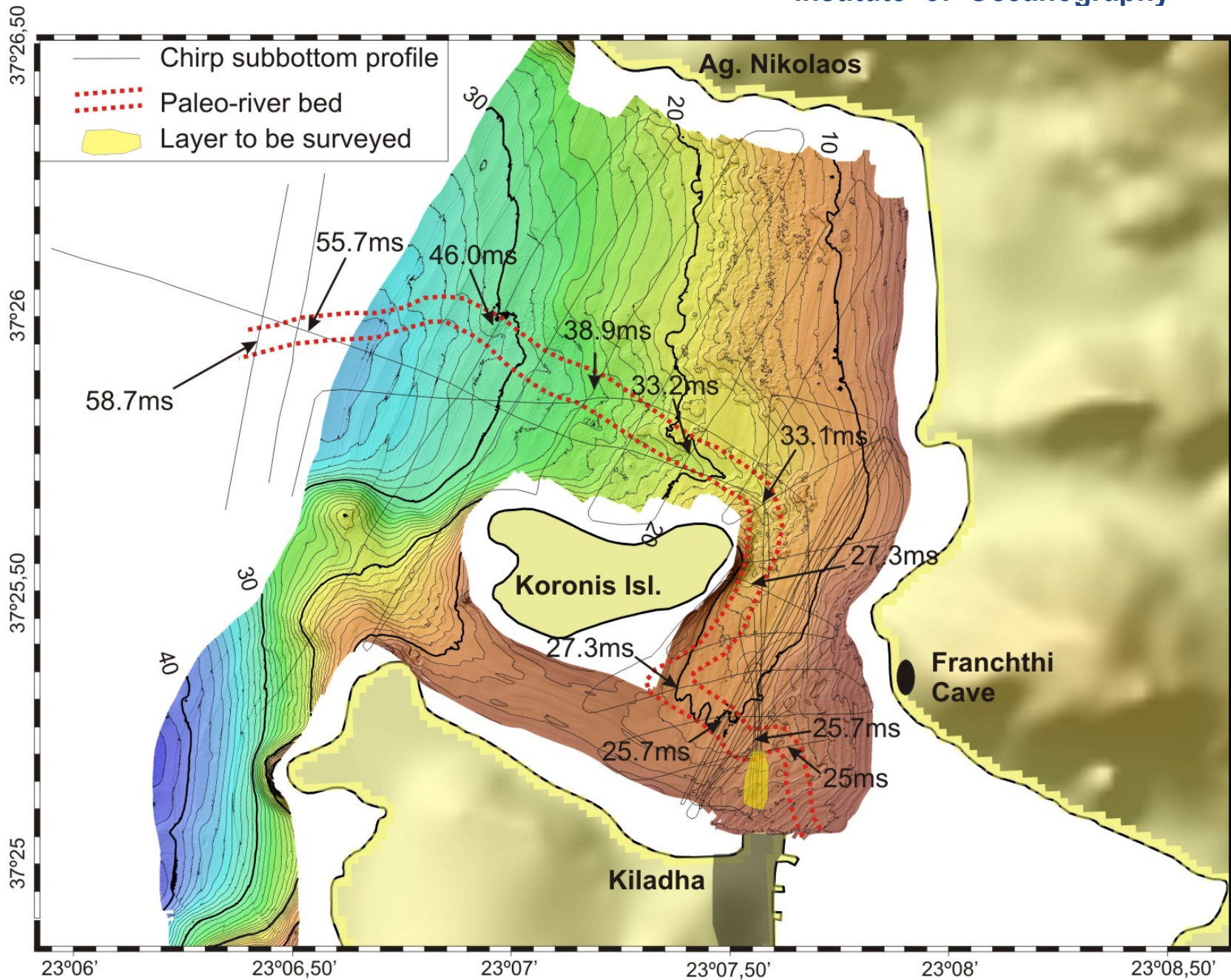
**Vessels of  
opportunity**



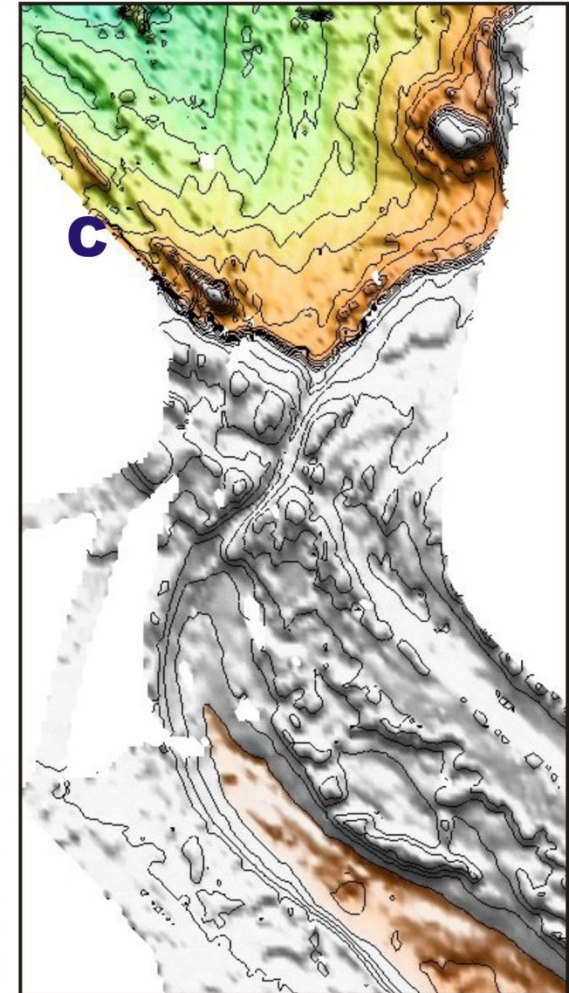
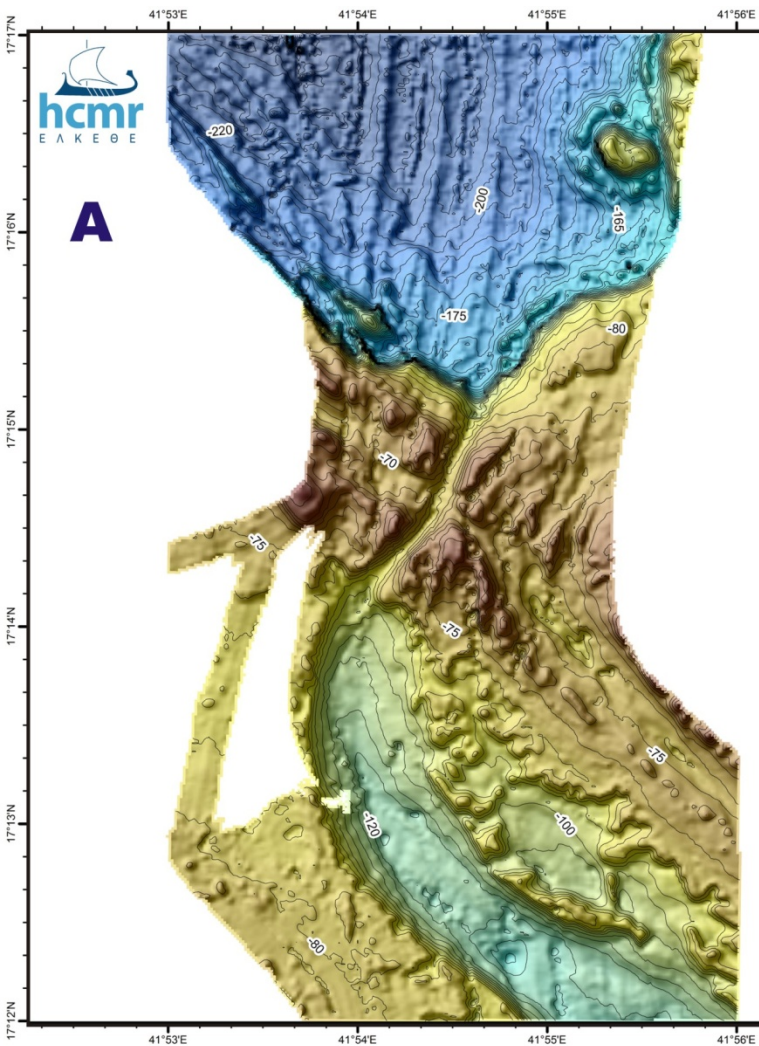
**TURANOR PlanetSolar**

# Technology in Underwater Geoarchaeology





- (A) High-resolution shaded bathymetry  
(B) backscatter (reflectivity) map and  
(C) shaded bathymetry with parts shallower than 120m not colored.



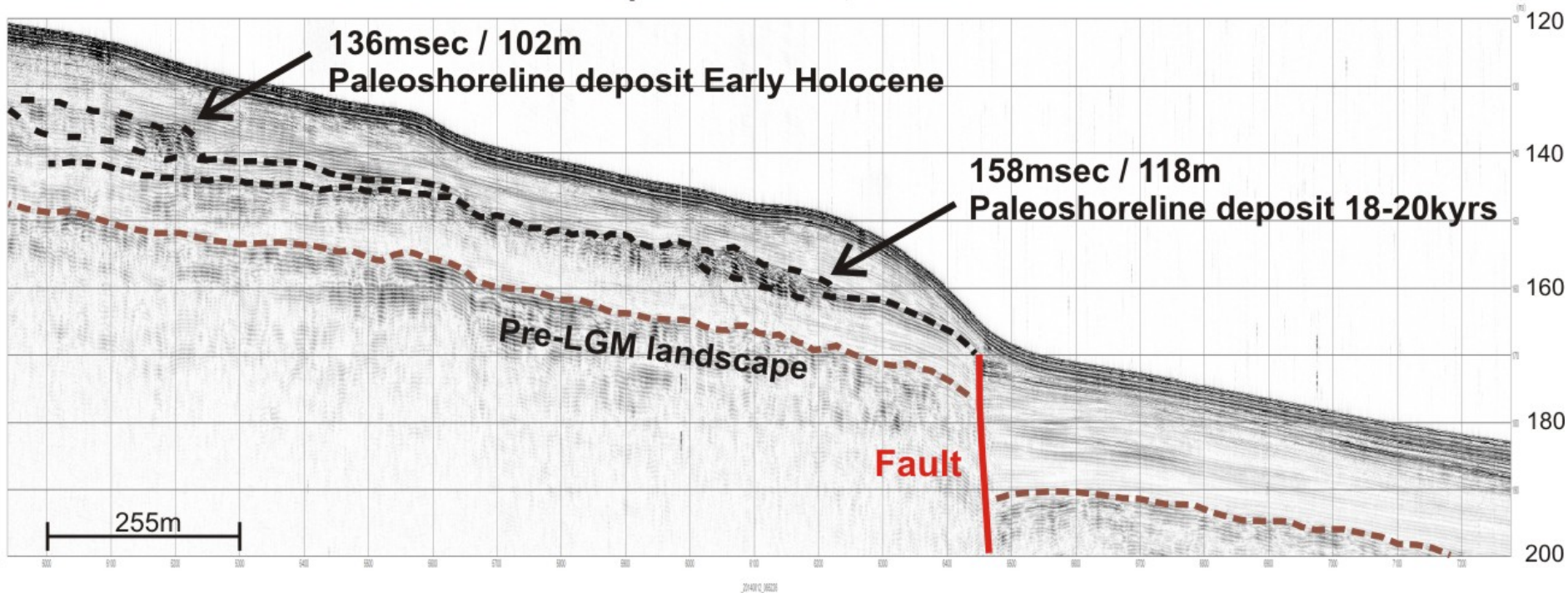
# Palaeo-shoreline deposits

## Boomer sub-bottom profile 0,7-3kHz

ENE

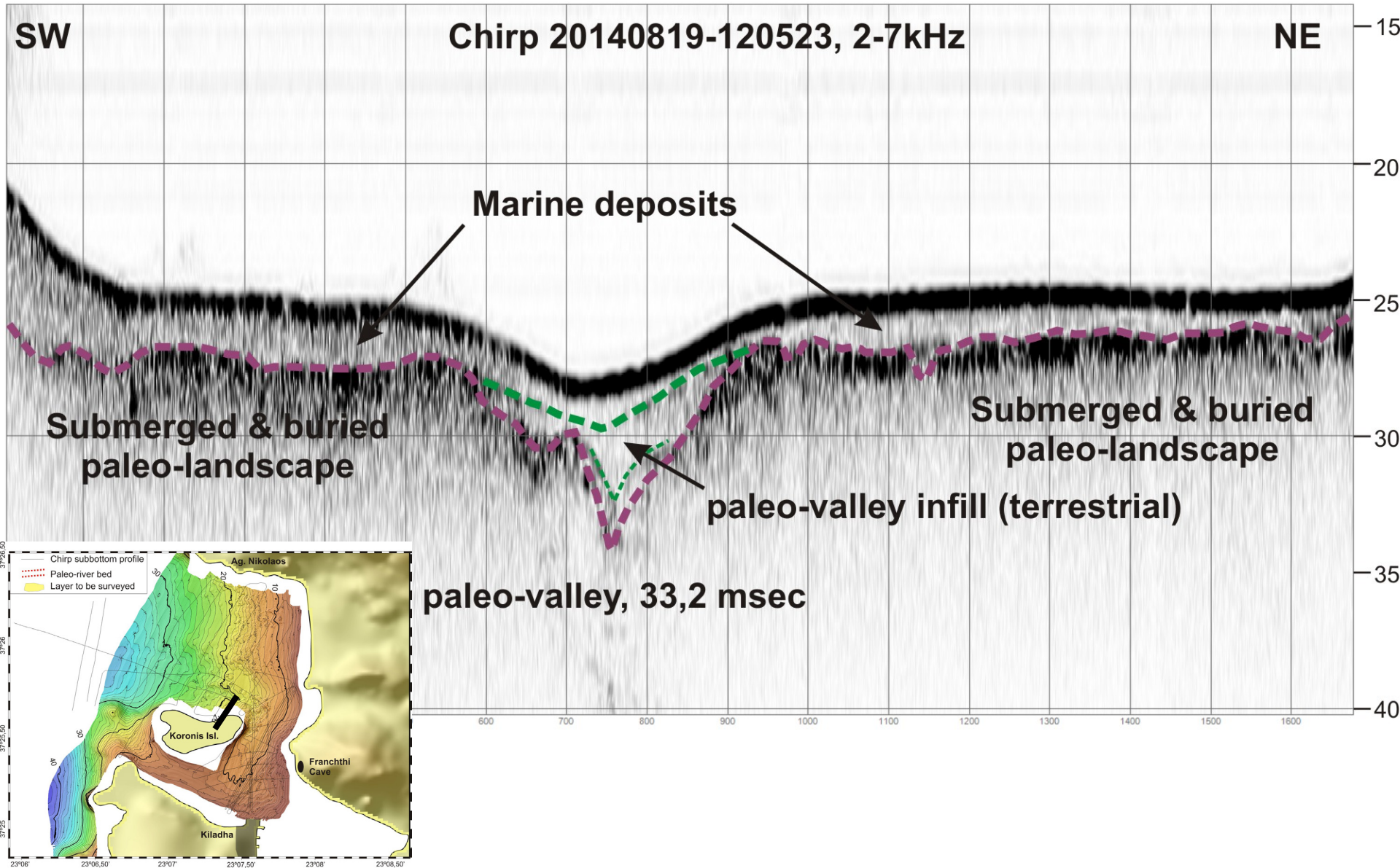
Profile Boomer 9-10 part 1 zoom 0,7-3kHz / 175 Joule / 500msec

WSW





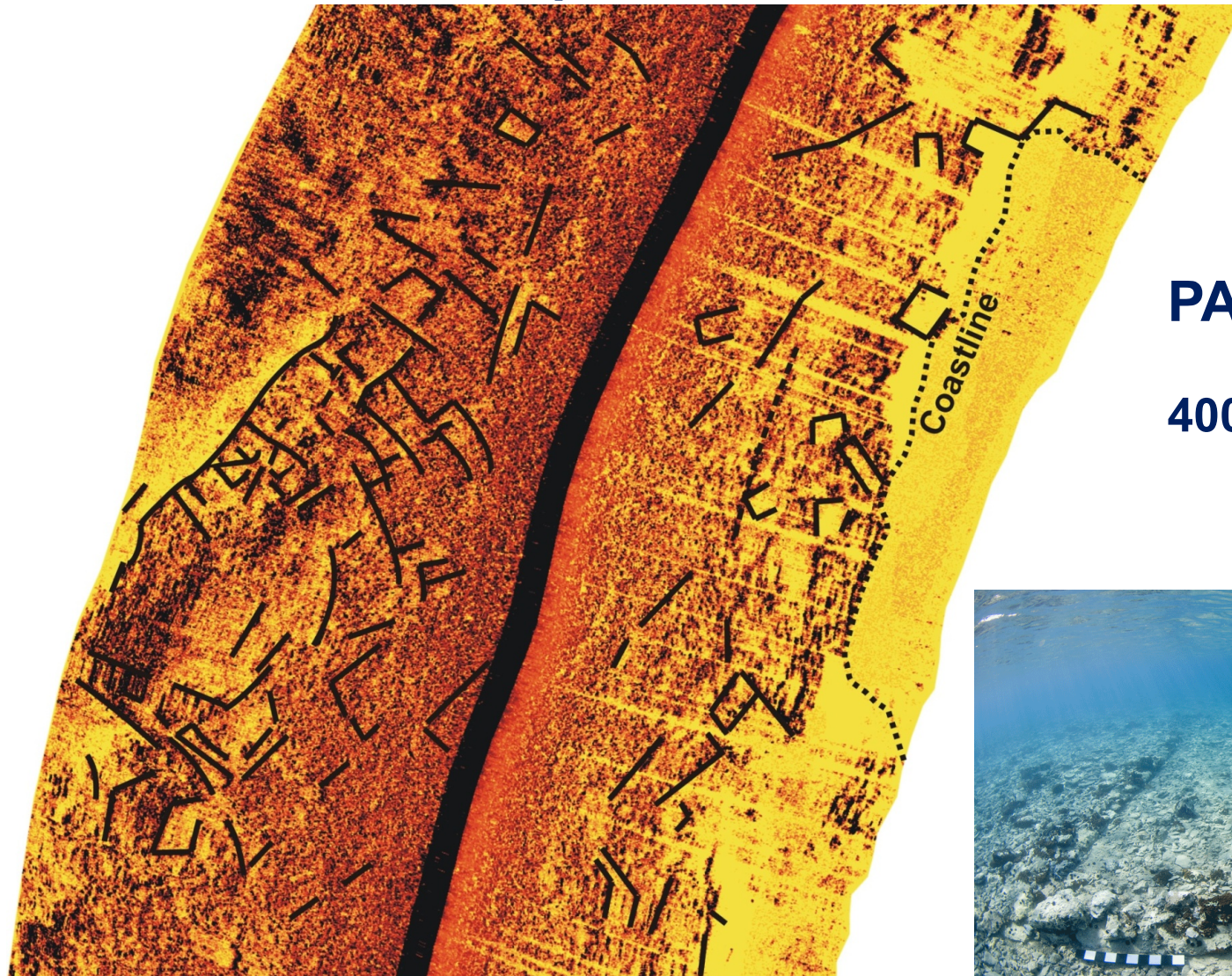
# Palaeo-rivers





Maximum water depth  
<4m

# Side scan sonar documentation of prehistoric remains



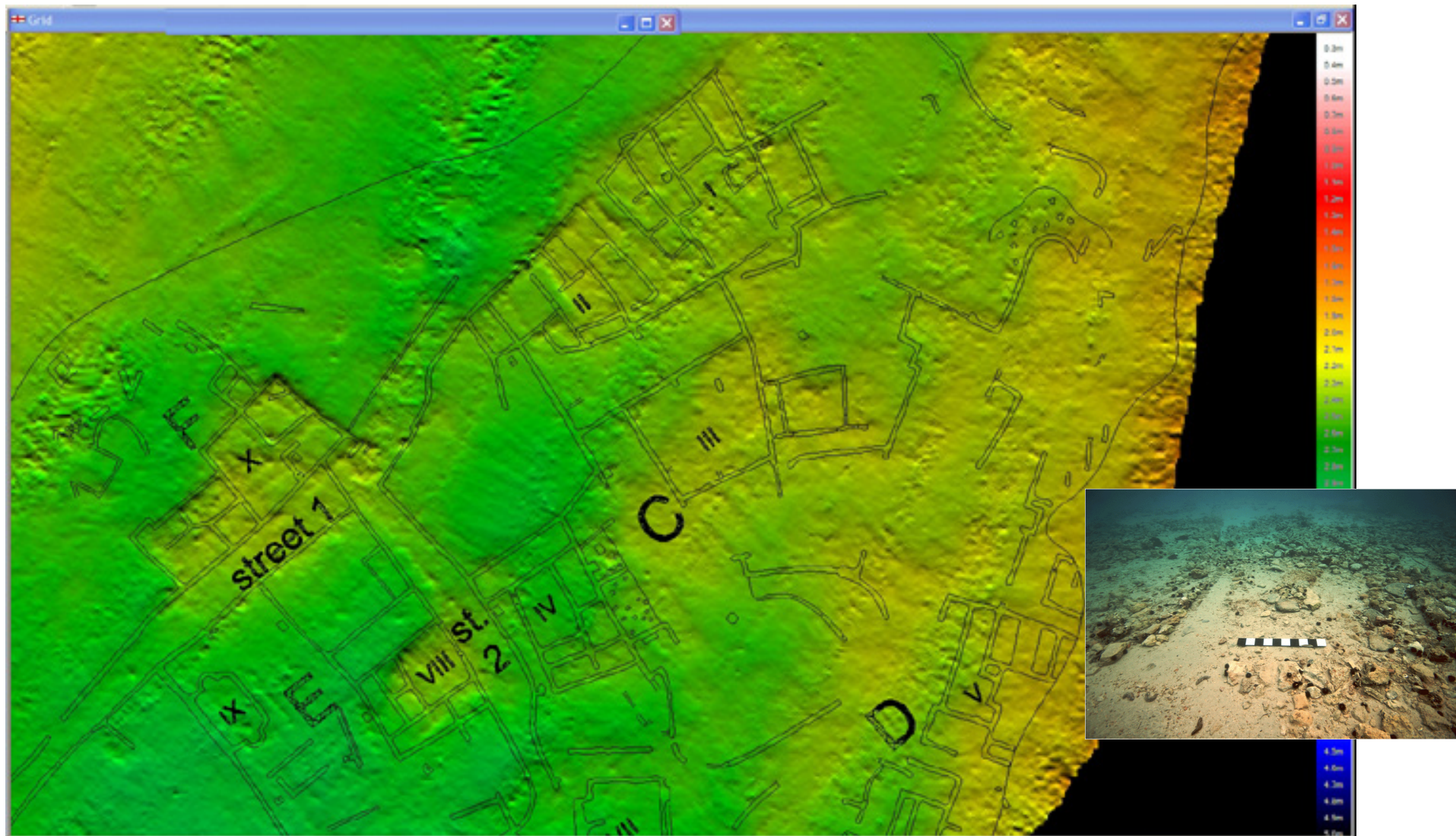
**PAVLOPETRI**

**400kHz**



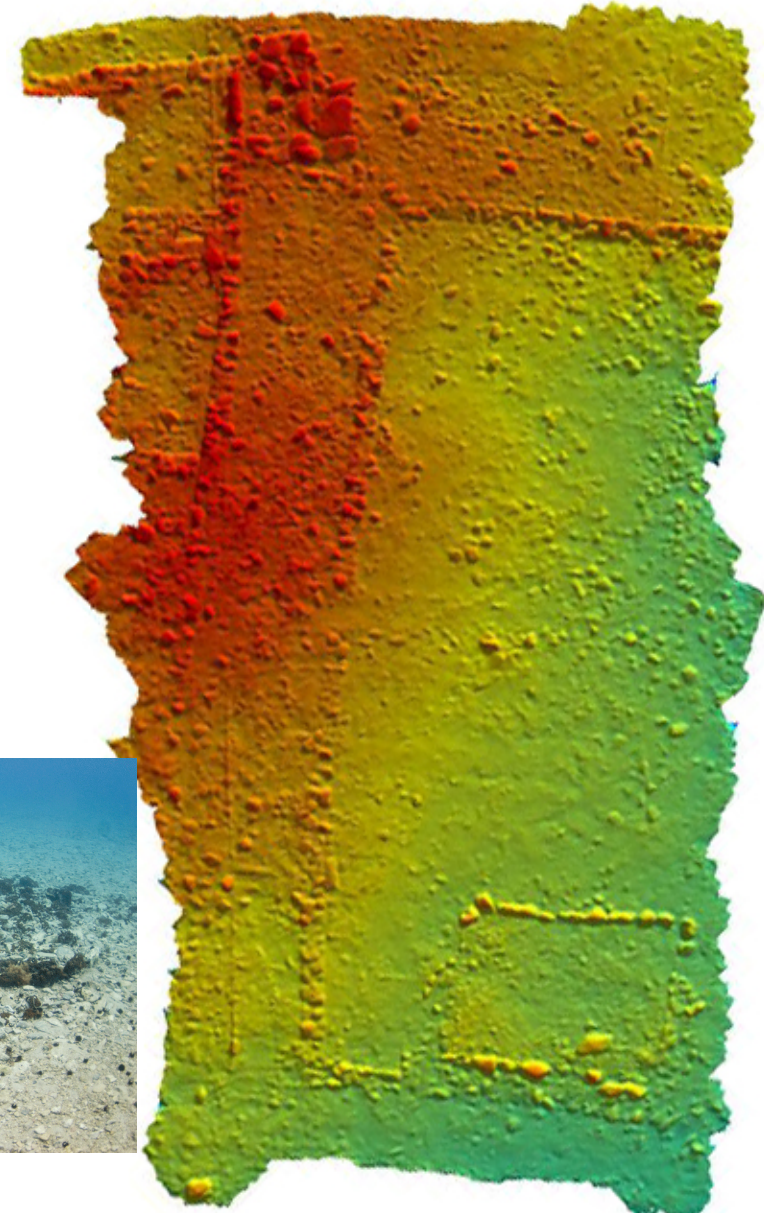
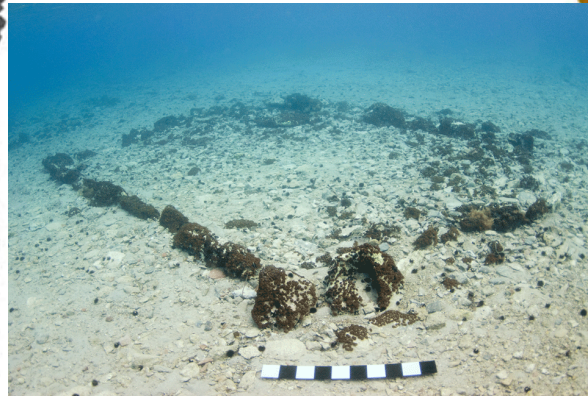
0 10 20 30 40 50 100 m

# Multibeam documentation of the prehistoric remains

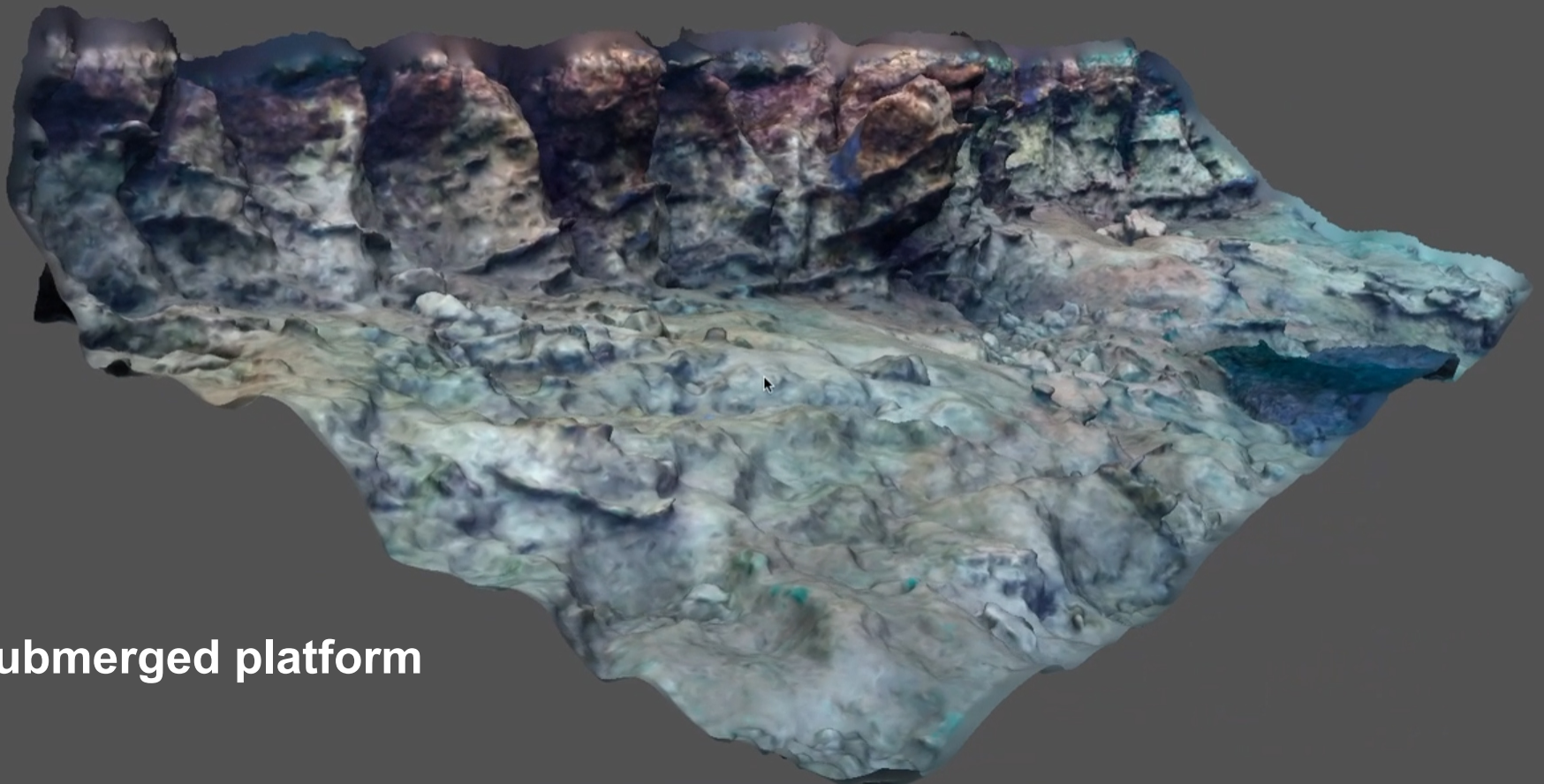


Geoswath Multibeam bathymetry (shaded relief) at 20 cm grid

# Photo-mosaic (left) & 3D relief (right)



# Orthophoto-mosaic / computer vision techniques



Submerged platform

**Thank you**

