



ISPRA

Istituto Superiore per la Protezione
e la Ricerca Ambientale

Dipartimento Difesa del Suolo

Servizio CARG - Geologia e Geomorfologia



REGIONE AUTONOMA DELLA SARDEGNA

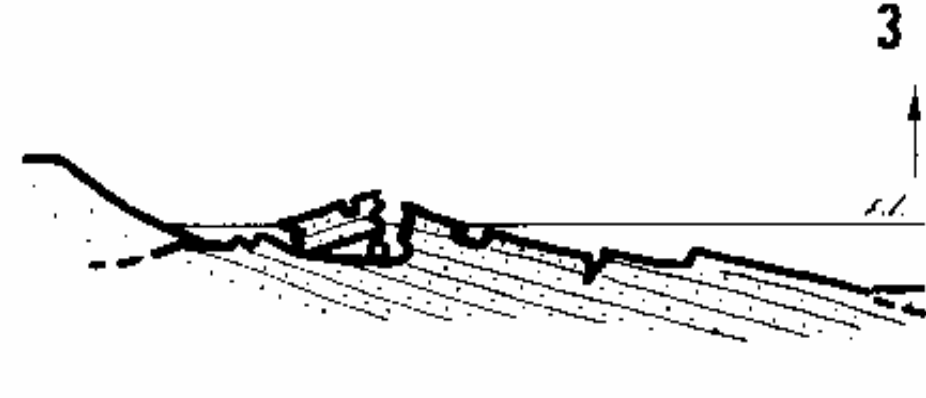
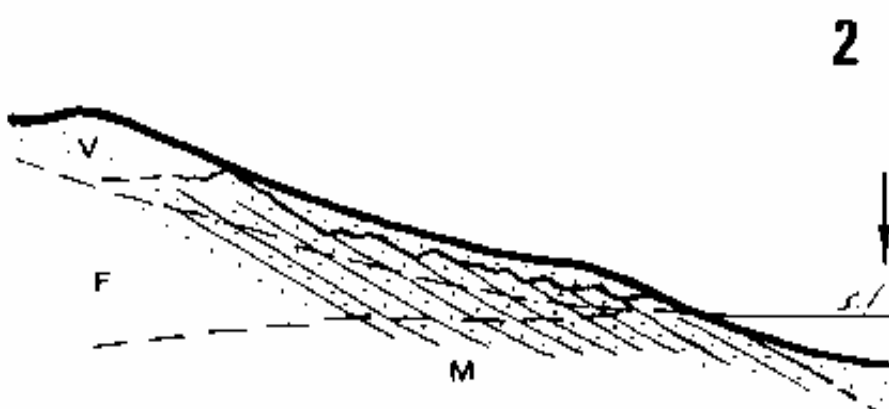
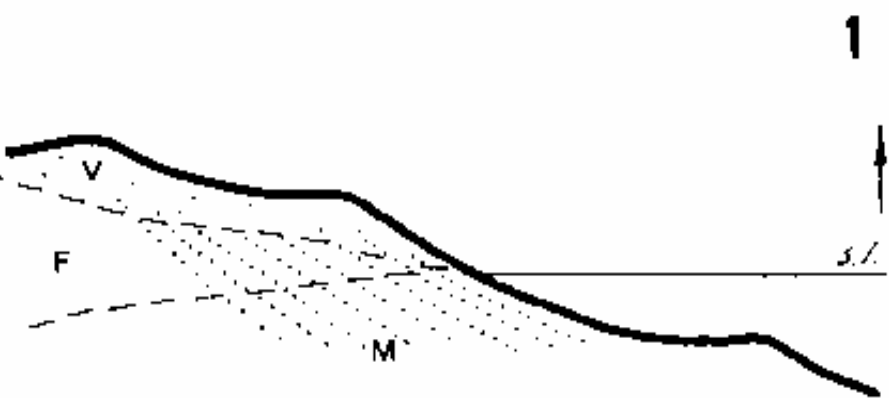
Il rilievo geologico subacqueo nella realizzazione della Carta Geologica d'Italia

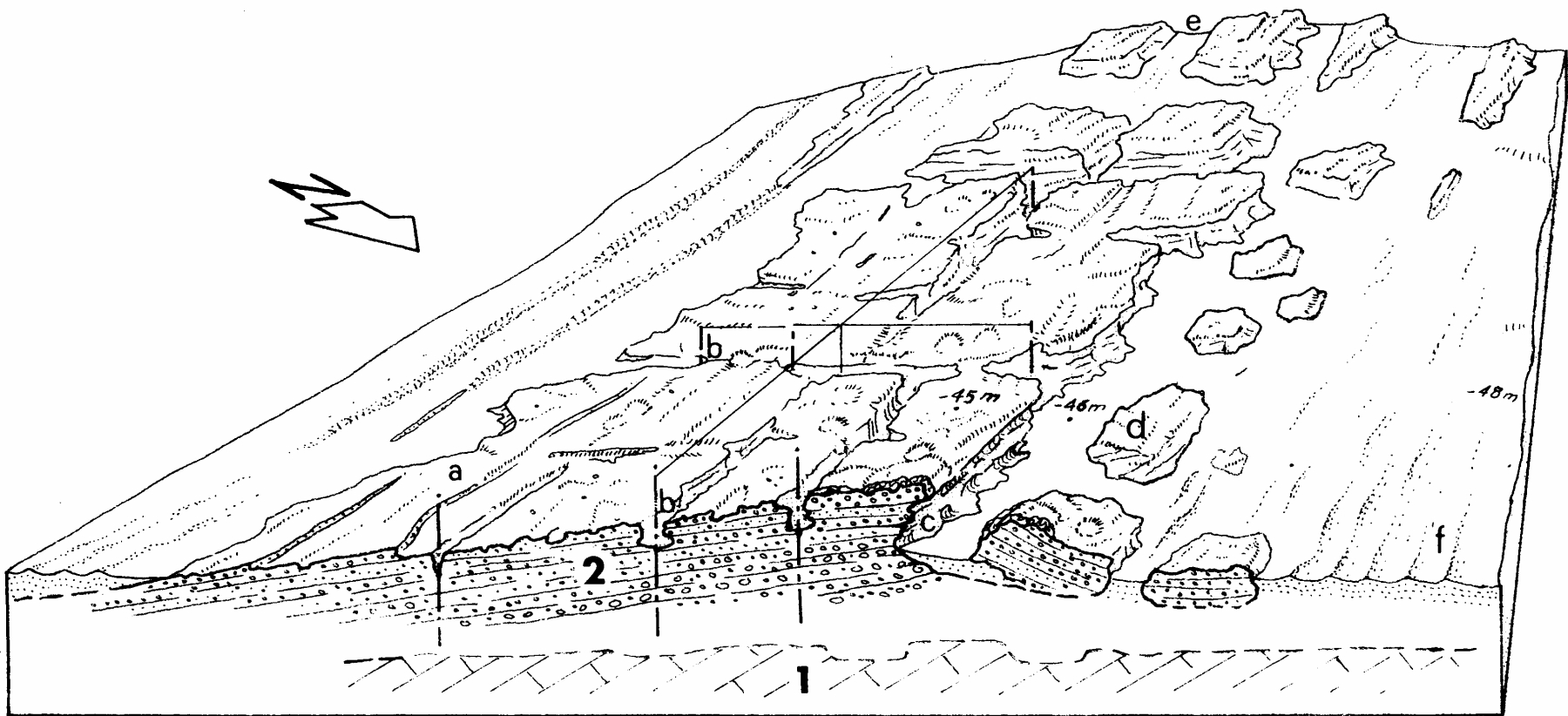
Paolo E. Orrù

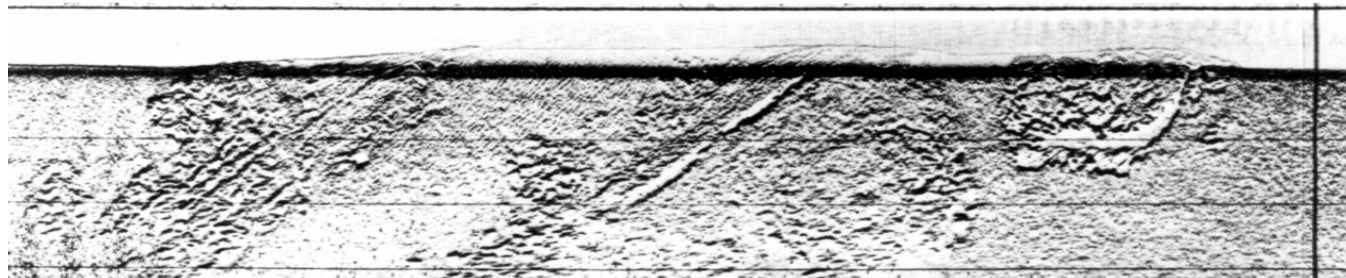
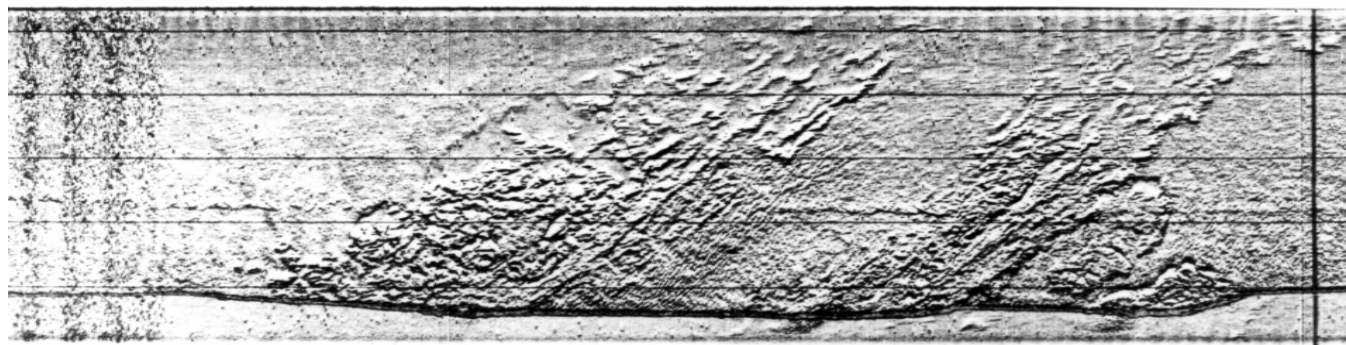
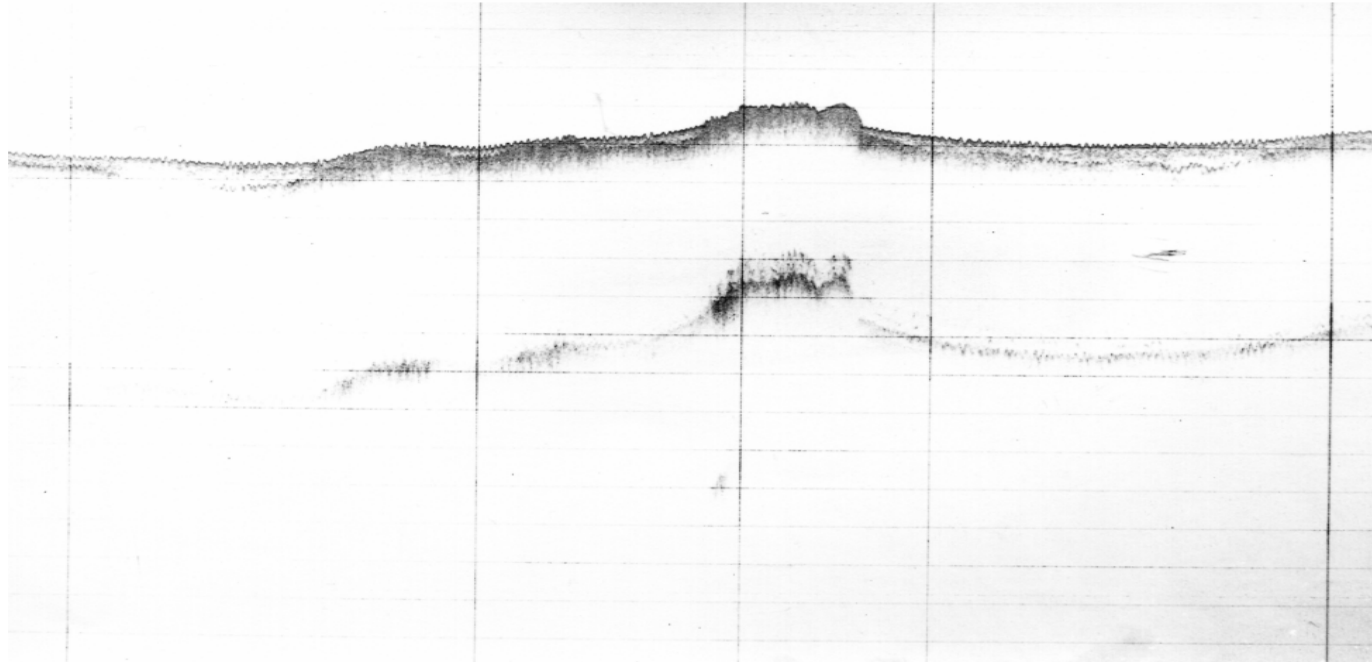
Antiche linee di costa: i depositi di beachrock

Università di Cagliari



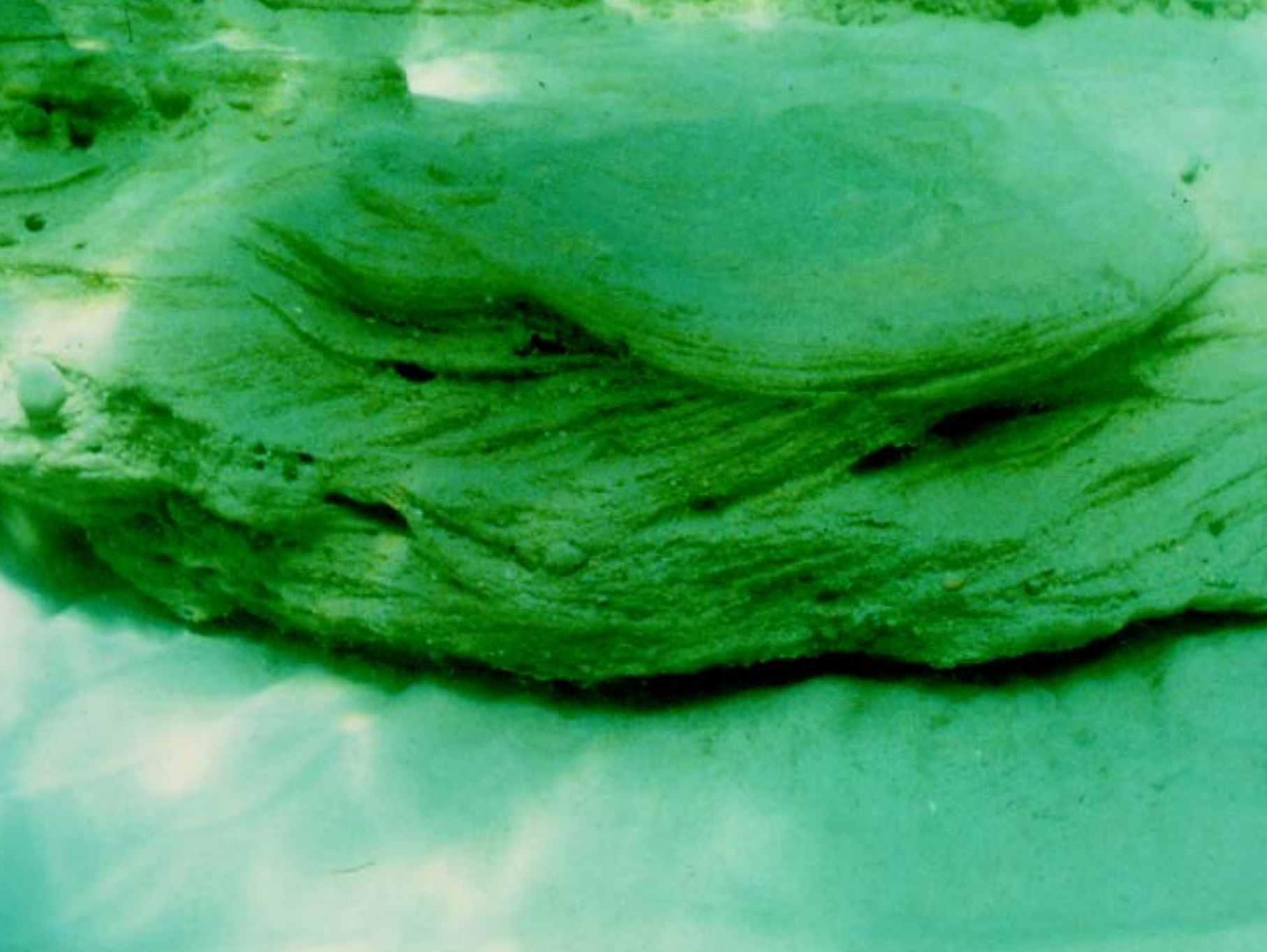




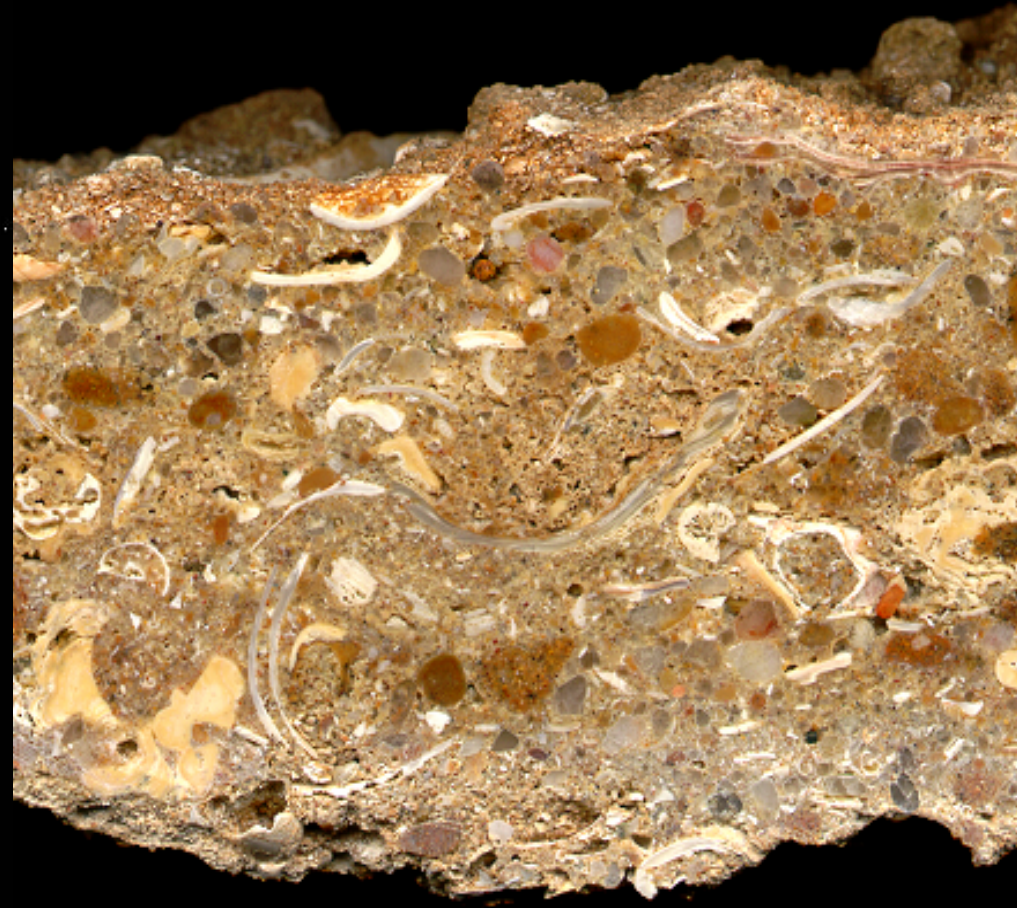




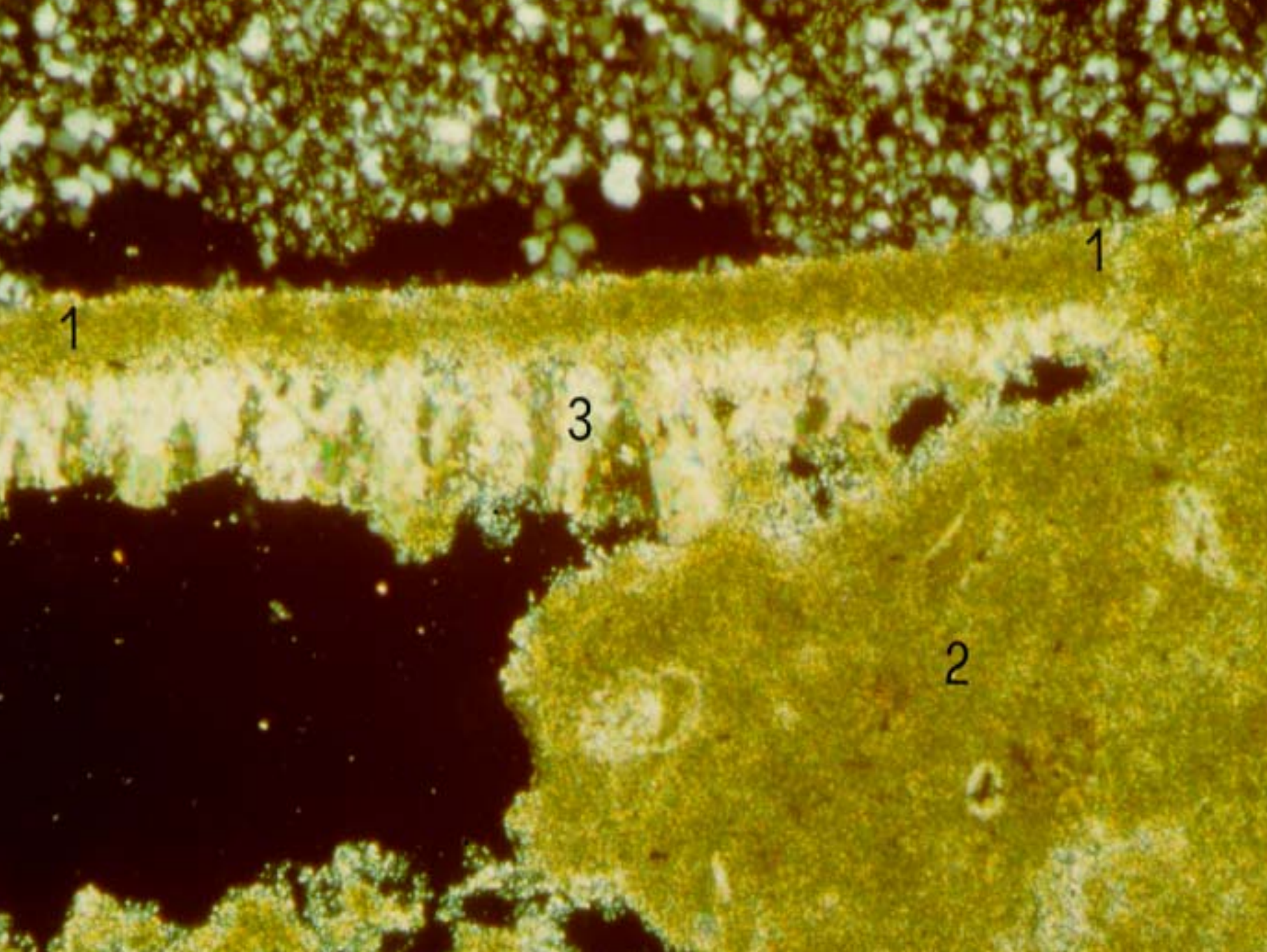


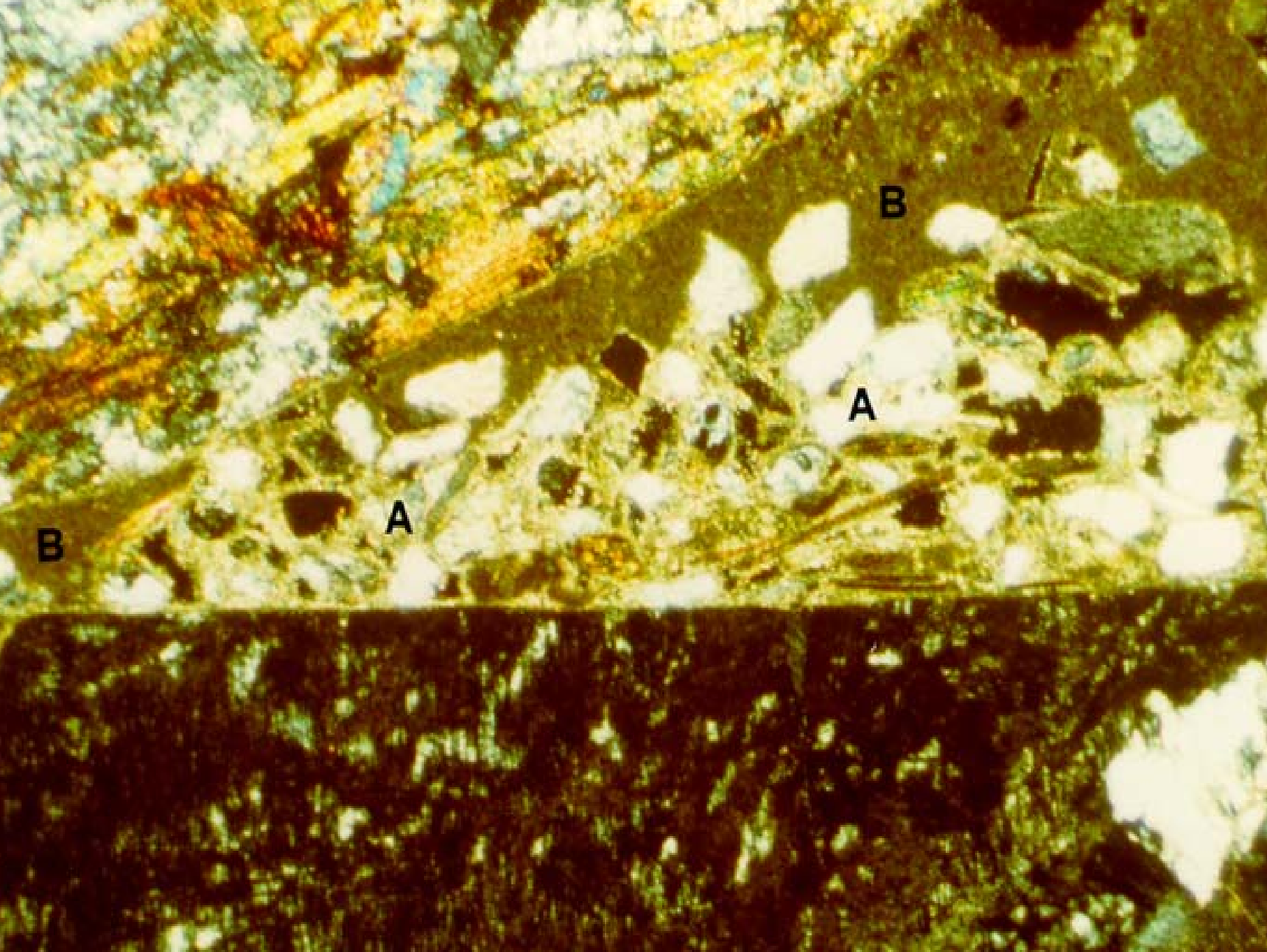






Litofacies delle beach-rock



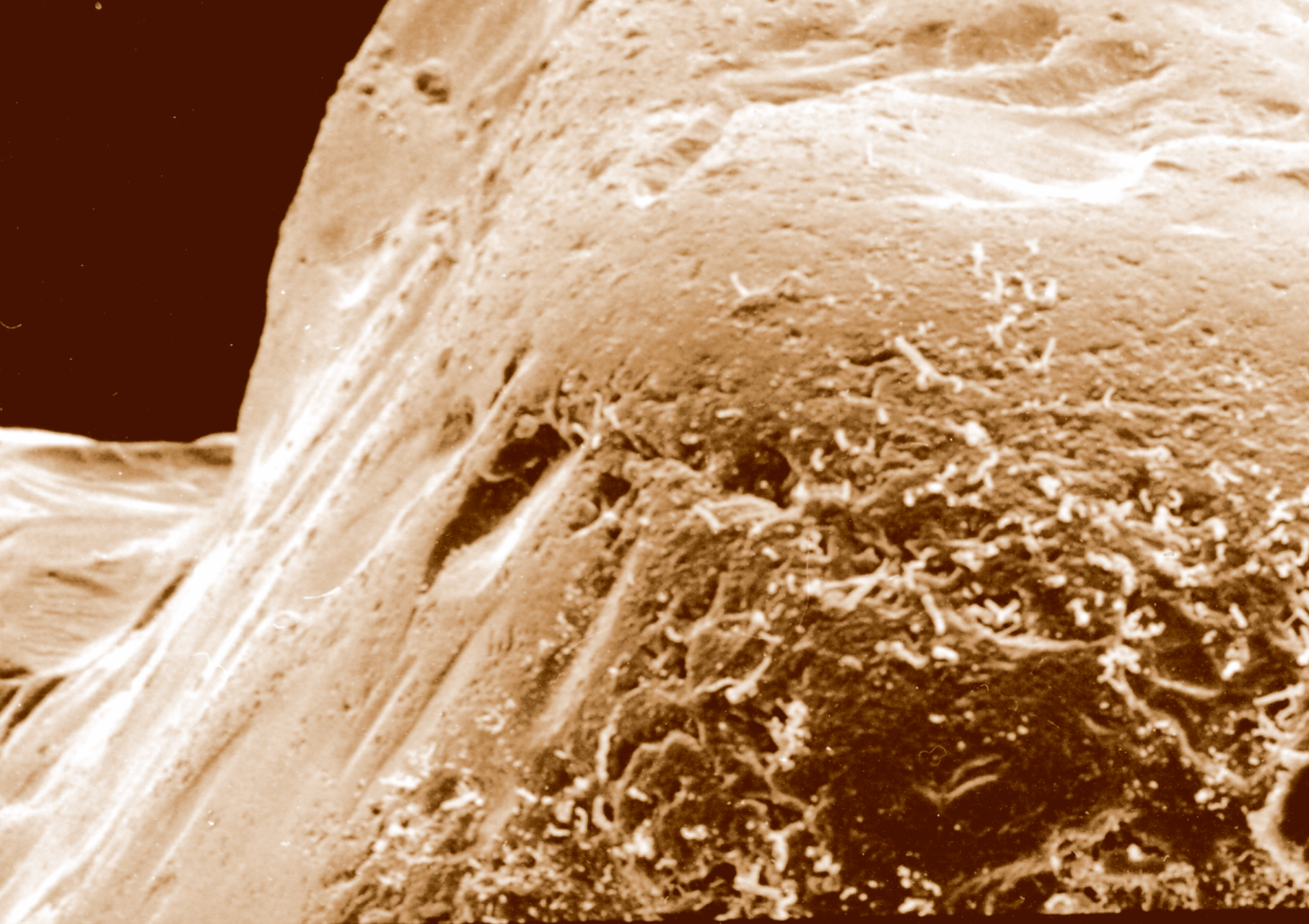


B

A

A

B



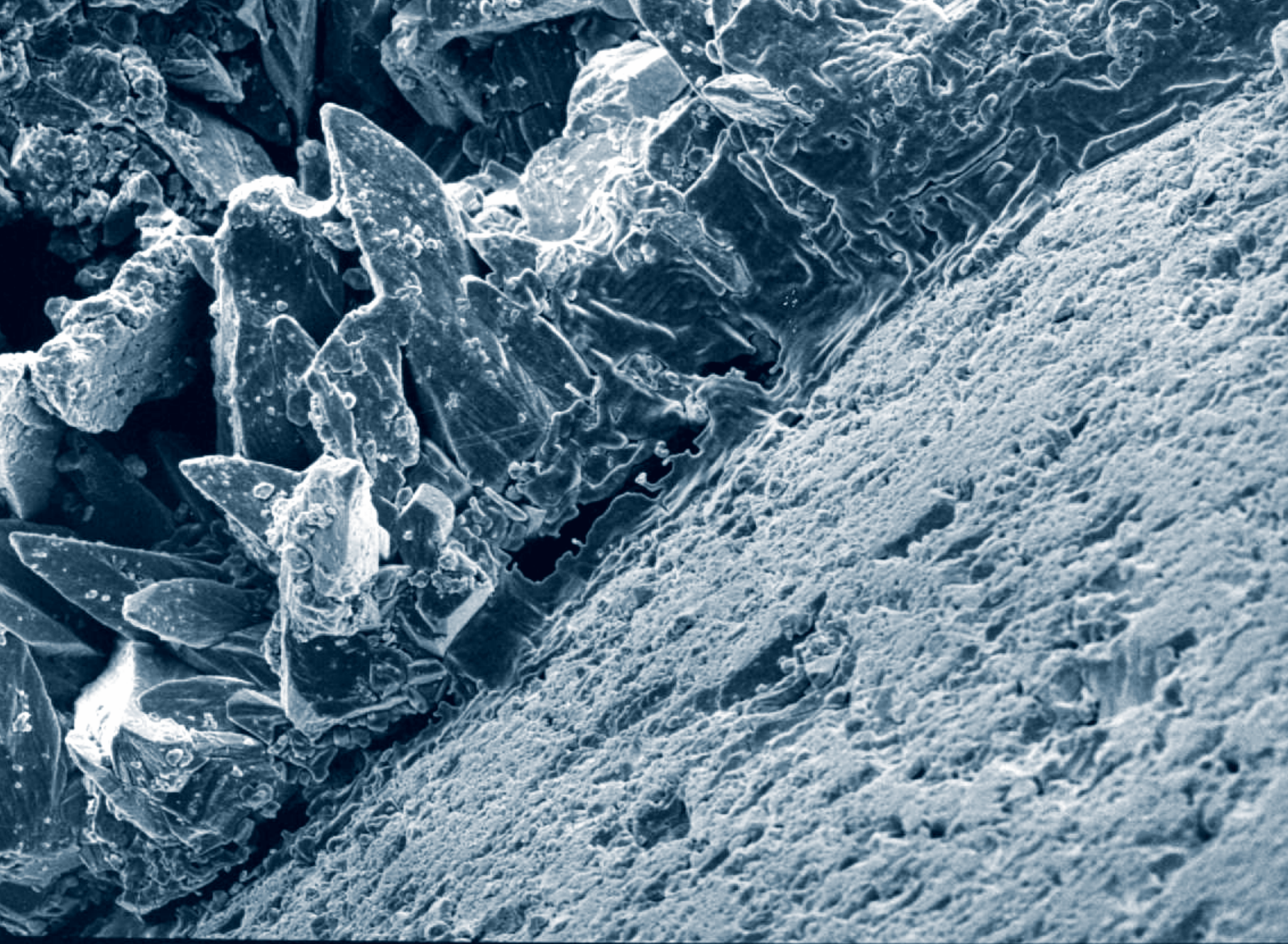
20µM

10KV

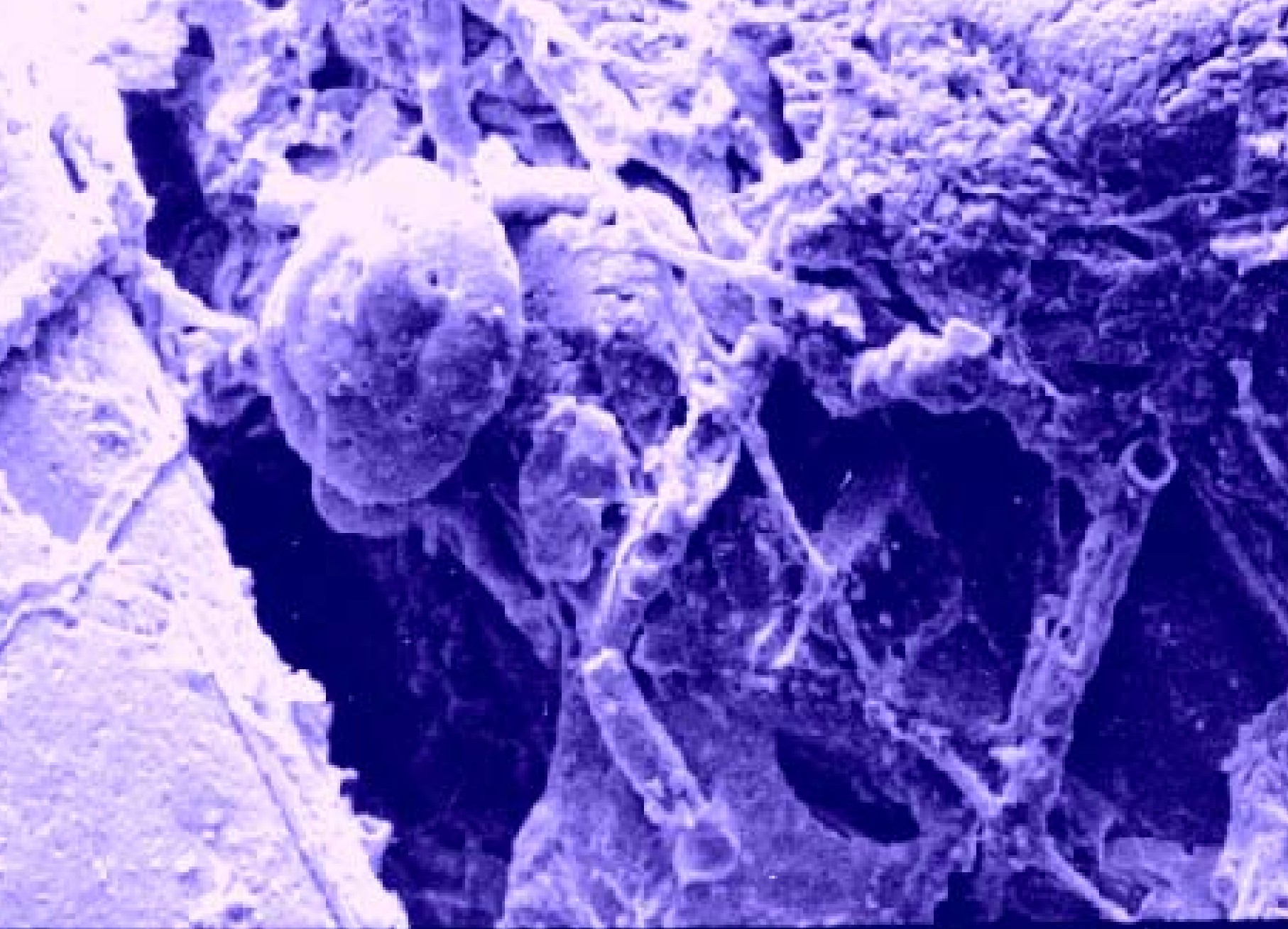
01

027

S



0000 0000 0000 0000 0000 0000 0000 0000 0000 0000



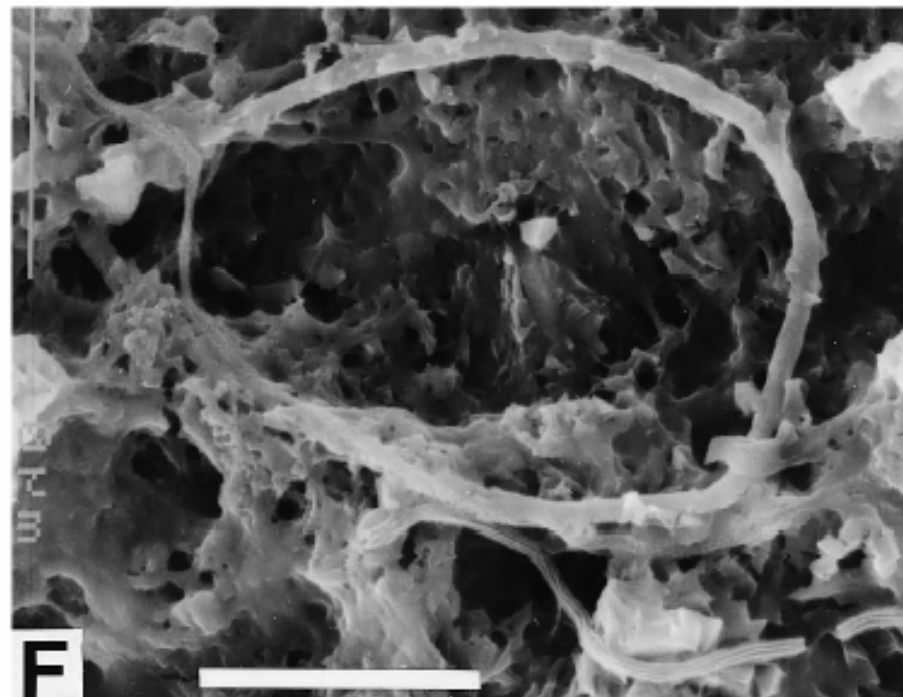
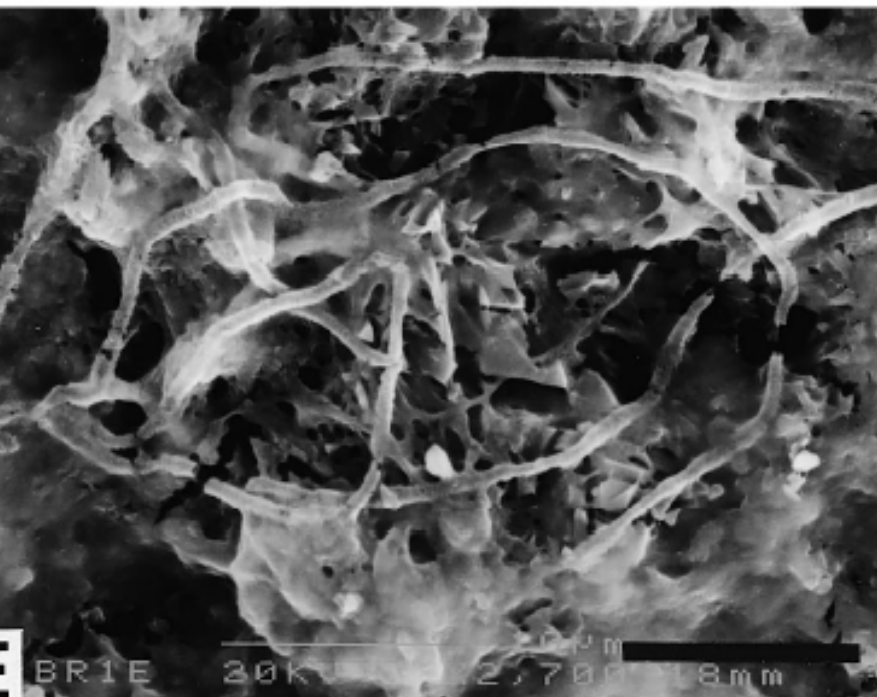
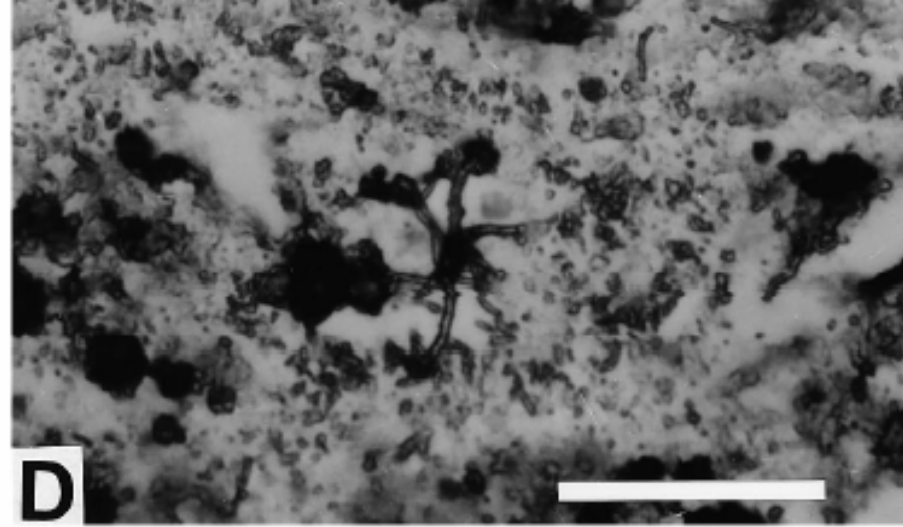
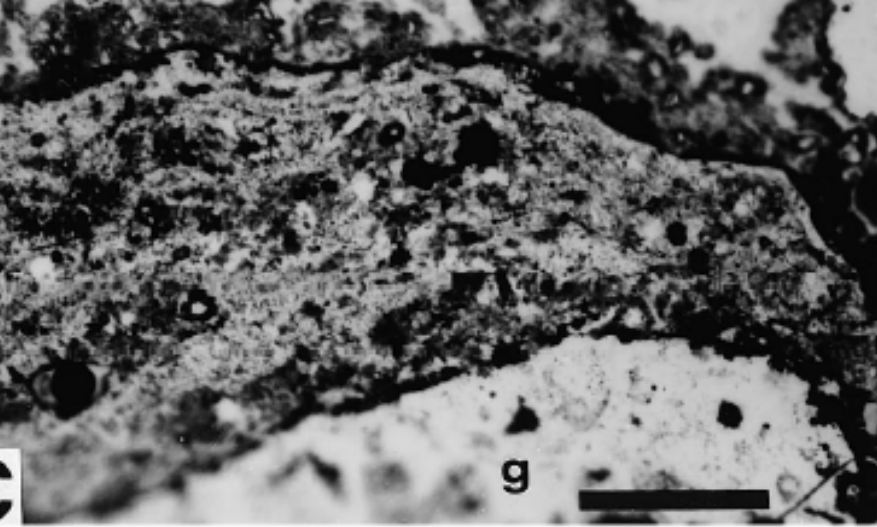
10µm

15K11

01

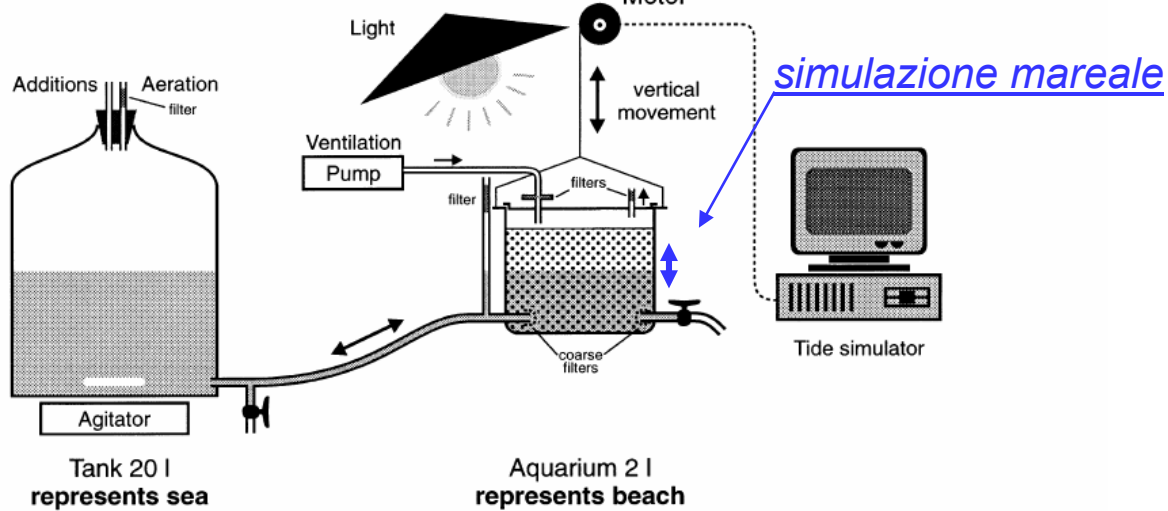
073

R

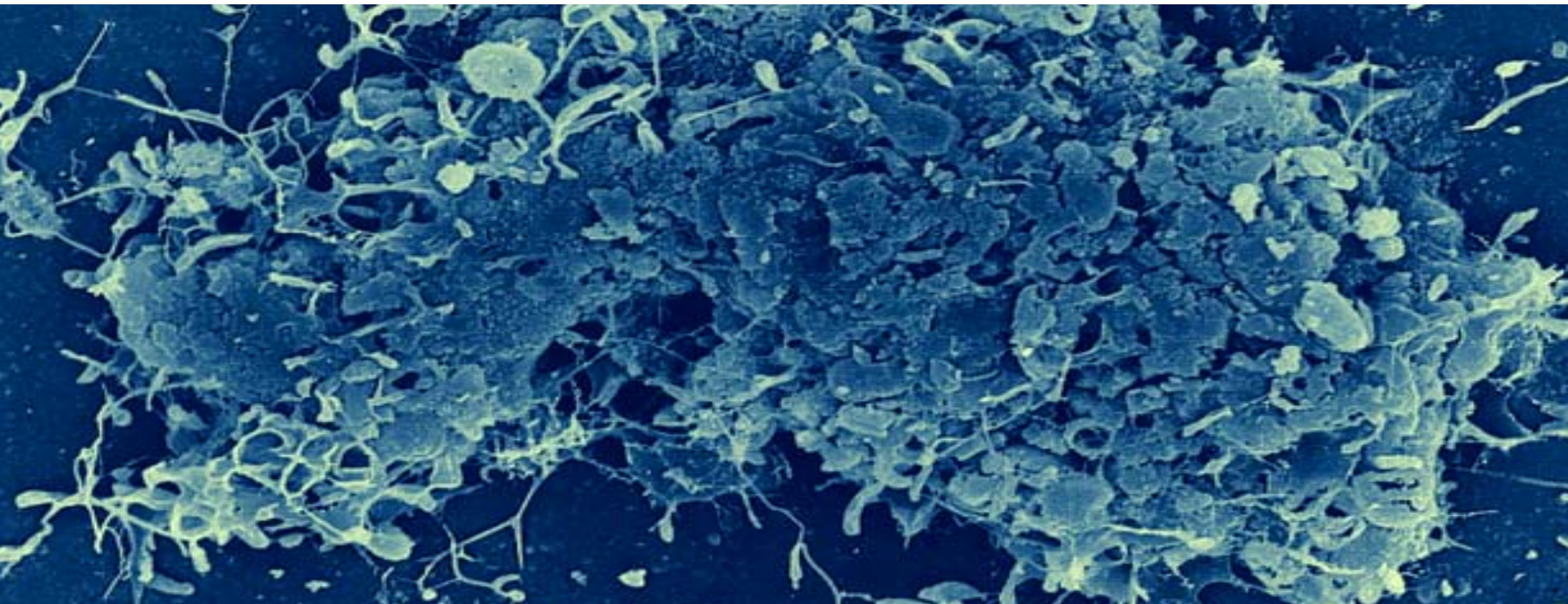


Grande Barriera – Queensland - Australia

(Gregory et. Al, 1999)



**Modello sperimentale di cementazione di una beachrock per azione microbiotica
Università di Ginevra (S) (Urs, 1999)**





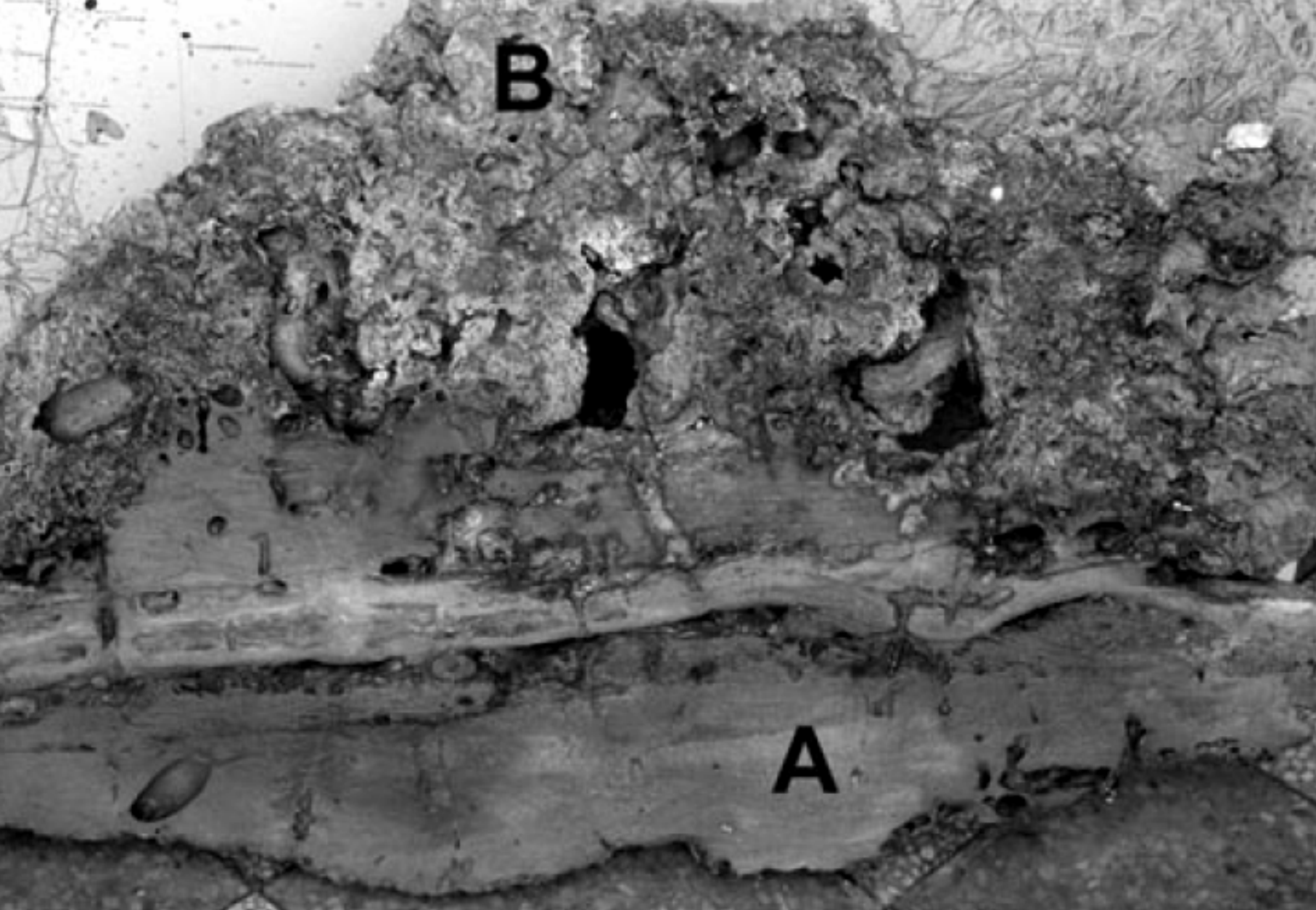








- 40 m



(Stefanon, 1967; Casellato & Stefanon, 2008)

- 23 m





movimenti relativi tra mare e terre emerse

emersione
sollevamento delle aree costiere
movimento delle terre emerse
(per tettonica o subsidenza)
Fenomeni locali
sommersione
abbassamento delle aree costiere

trasgressione
innalzamento del livello marino
variazione del livello
degli oceani
Fenomeni globali
regressione
abbassamento del livello marino

variazione eustatiche dovute a variazioni di capacità dei bacini:
sedimentazione, vulcanismo sottomarino, isostasia
poco discriminabili dai movimenti tettonici s.l.

VARIAZIONI EUSTATICHE

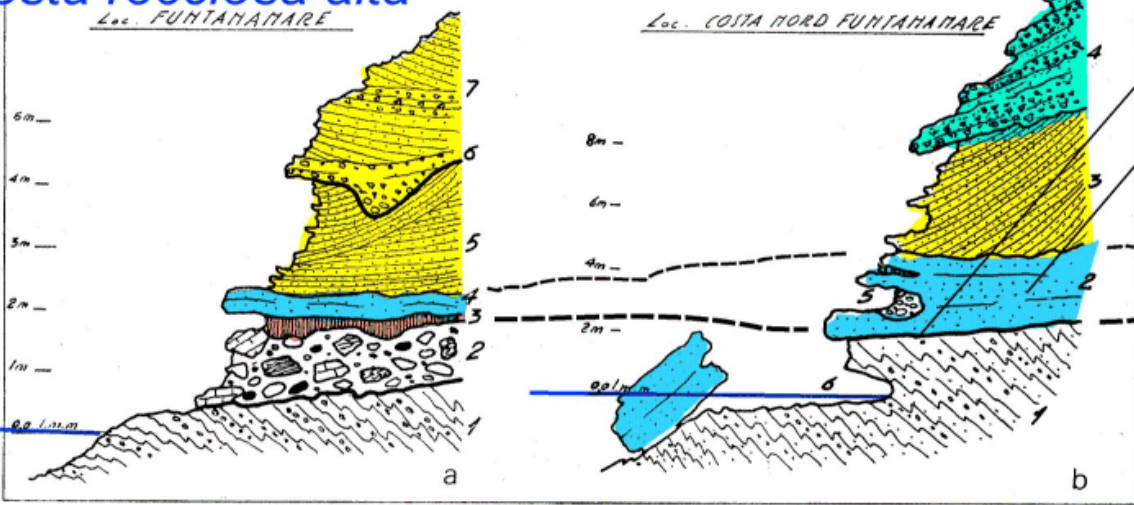
variazione del livello degli oceani

variazioni glacioeustatiche connesse alle oscillazioni climatiche

LINEE DI RIVA
dati paleoclimatici
dati geo-cronologici
dati geomorfologici
curve eustatiche

Linee di riva da variazioni eustatiche positive: facies deposizionale

Costa rocciosa alta



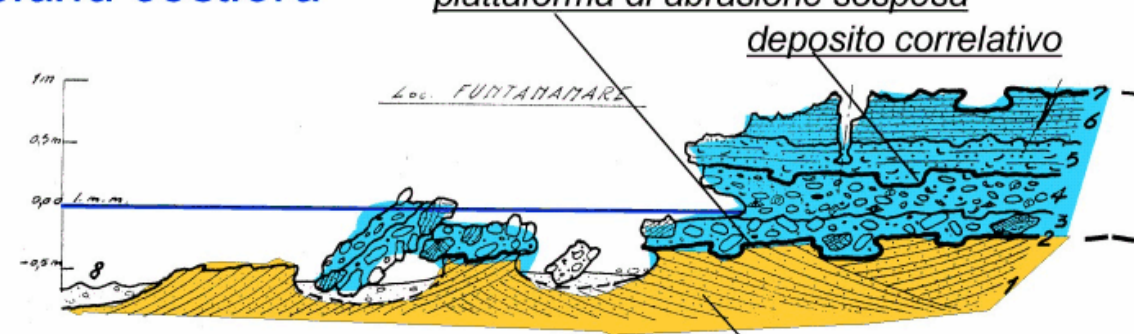
piattaforma di abrasione sospesa

deposito correlativo

marginе interno
solco di battente

Paleo linea di riva

Piana costiera



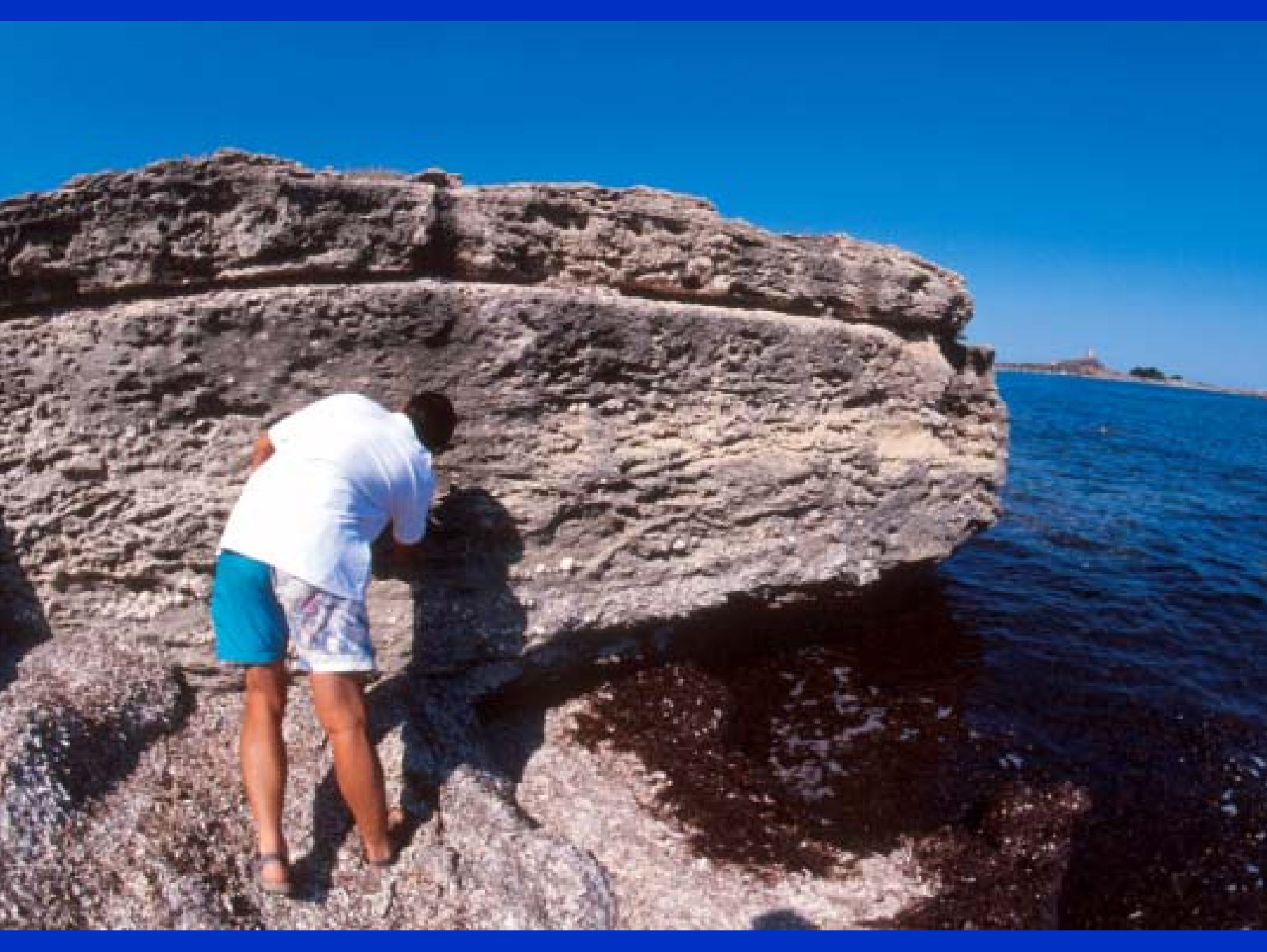
piattaforma di abrasione sospesa

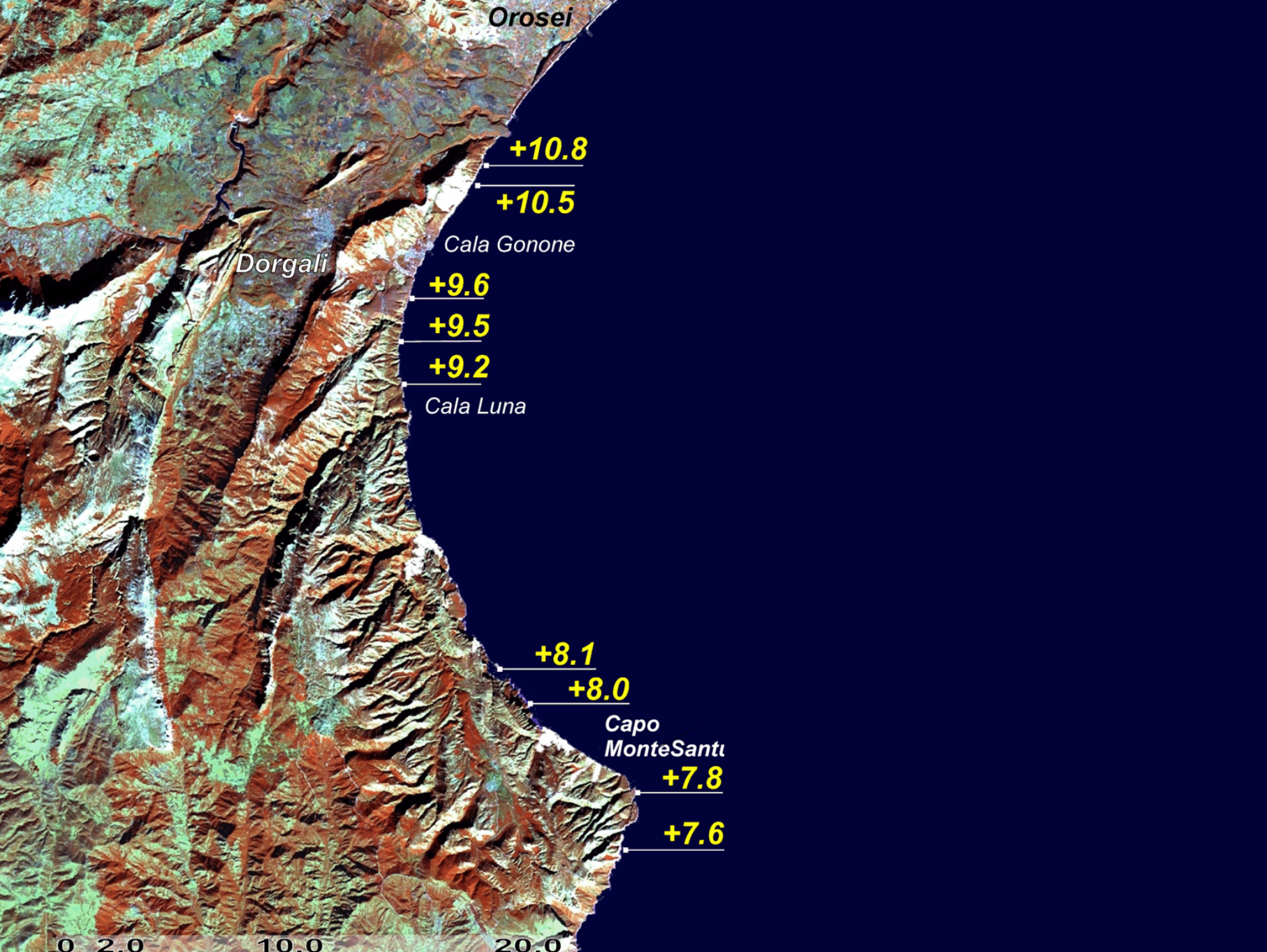
deposito correlativo

marginе interno
ripa di erosione

Paleo linea di riva

depositi continentali: eolici, alluvionali o di versante





Orosei

+10.8

+10.5

Cala Gonone

+9.6

+9.5

+9.2

Cala Luna

+8.1

+8.0

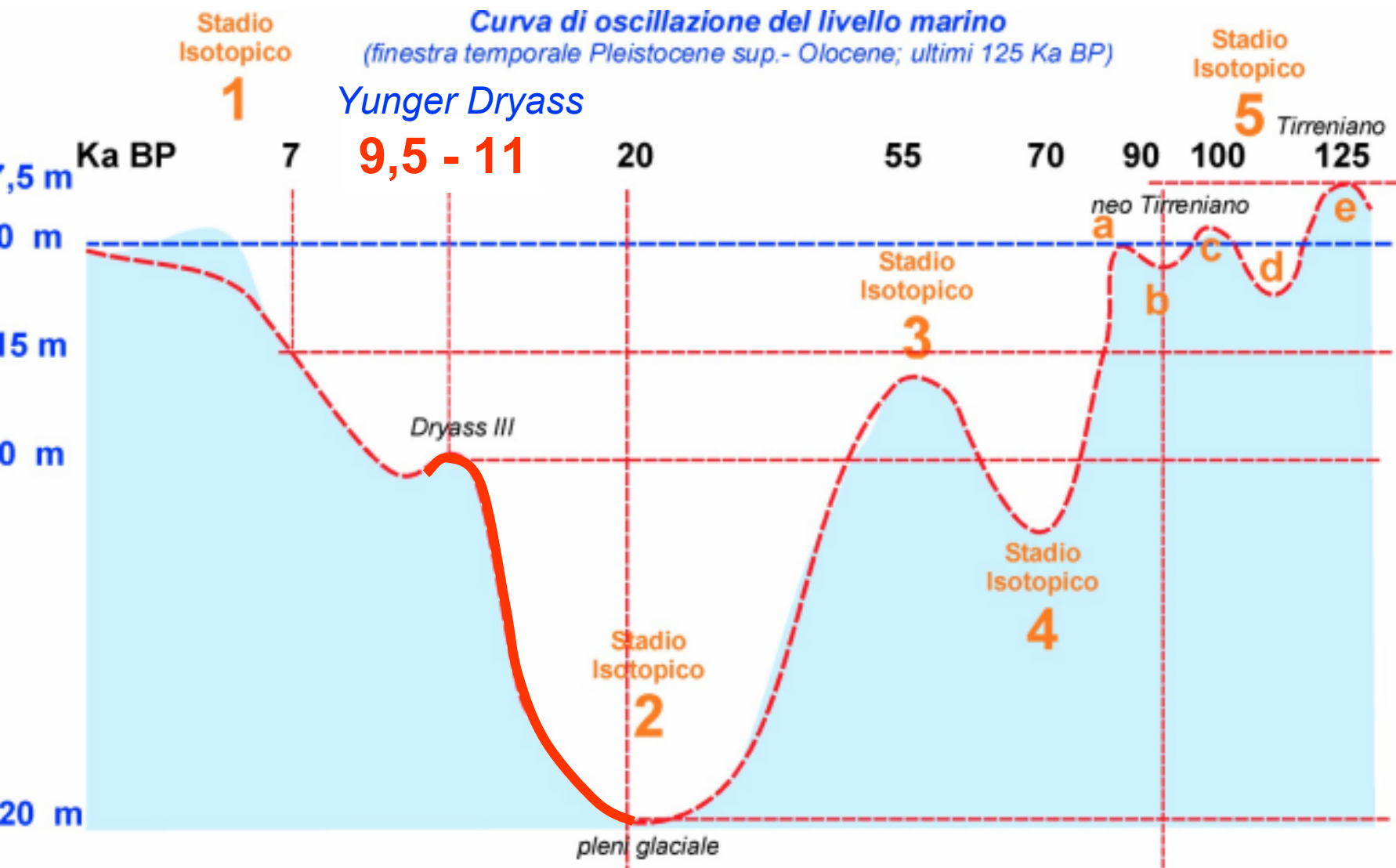
Capo
MonteSanti

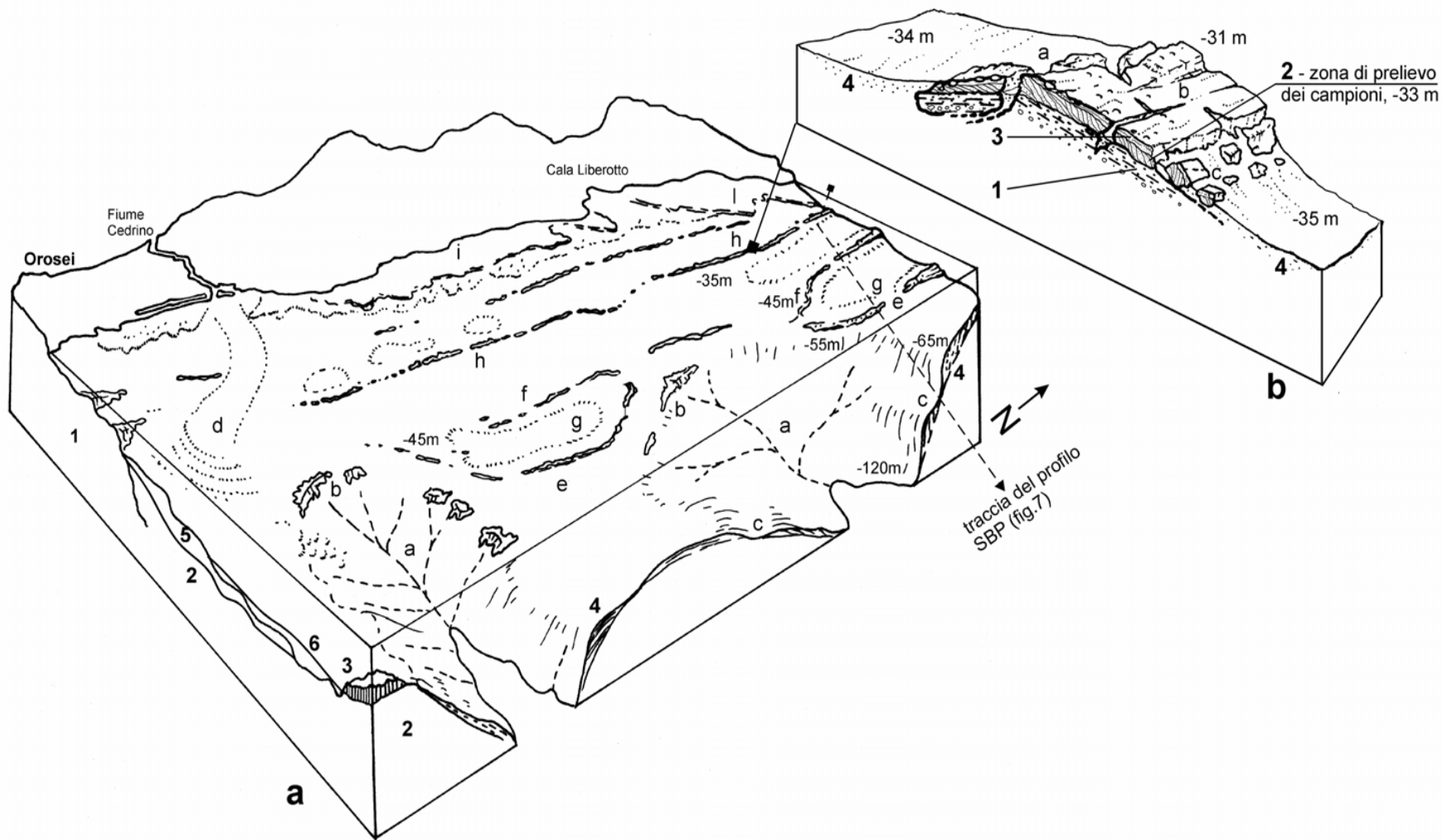
+7.8

+7.6

Dorgali

0 2.0 10.0 20.0







**Capo
Altano**

Carloforte

S. Antioco

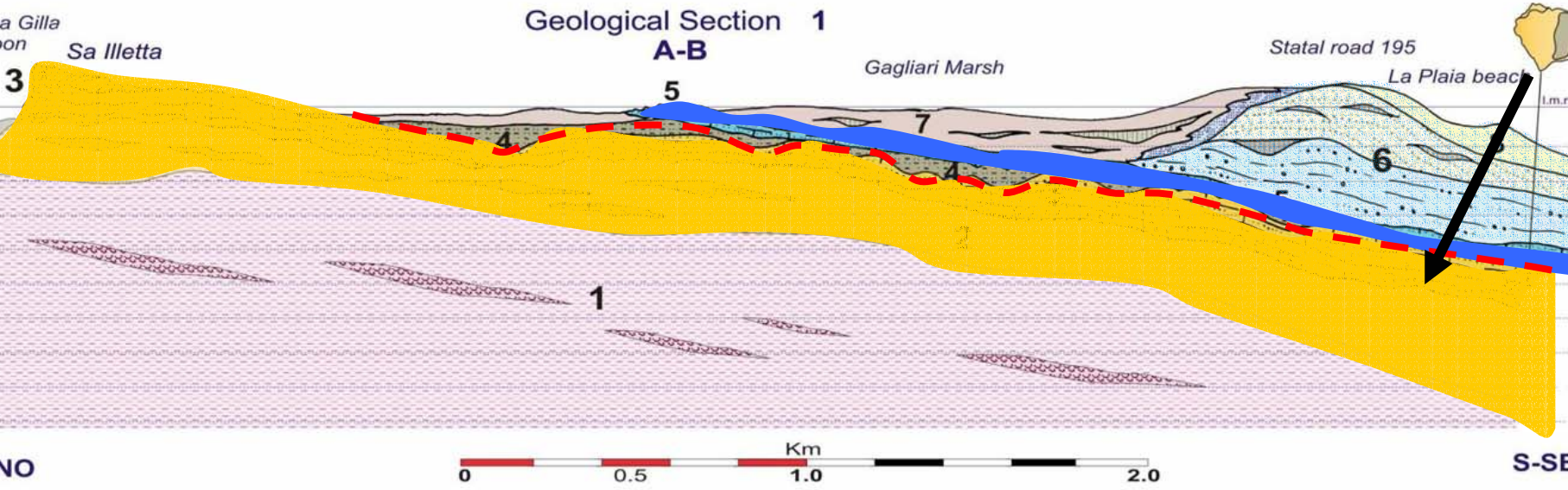
**G. di
Palmes**

Capo Teulada



CAGLIARI

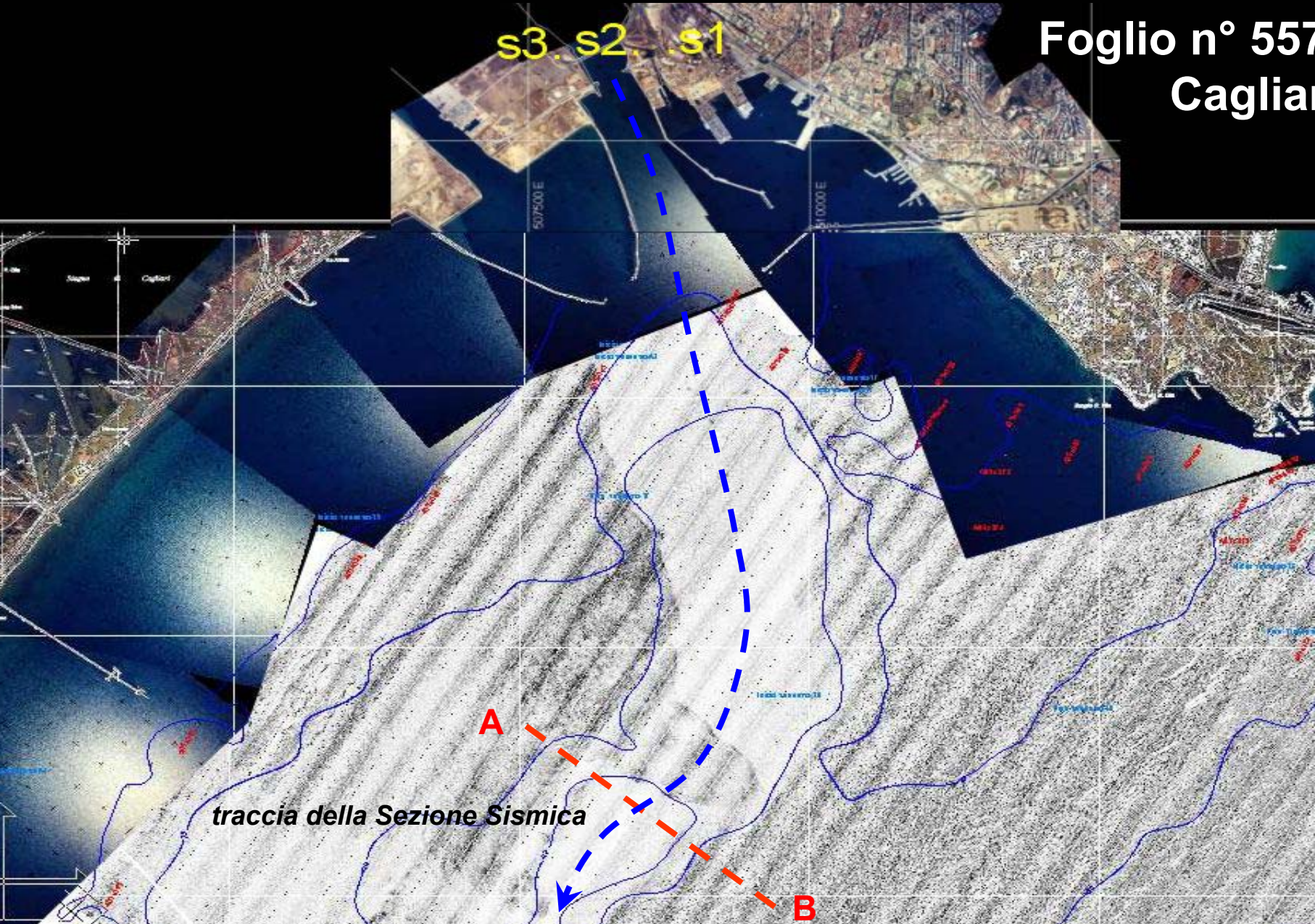
Golfo di Cagliari

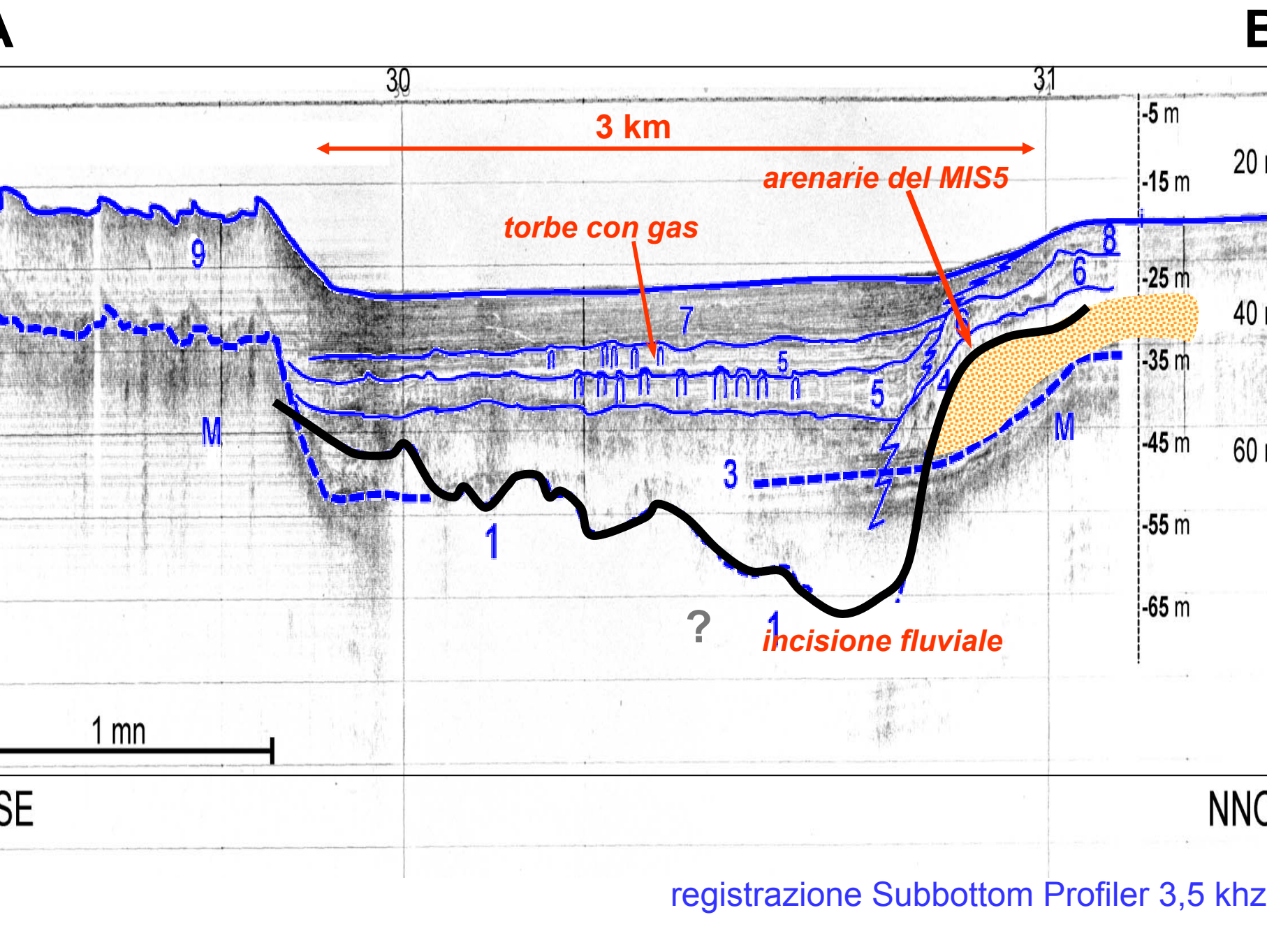




Indagini del paleo-alveo di Santa Giula in piattaforma continentale rossimale

Foglio n° 557
Cagliari







Cagliari

Poetto

A

B

S1

S2

S3

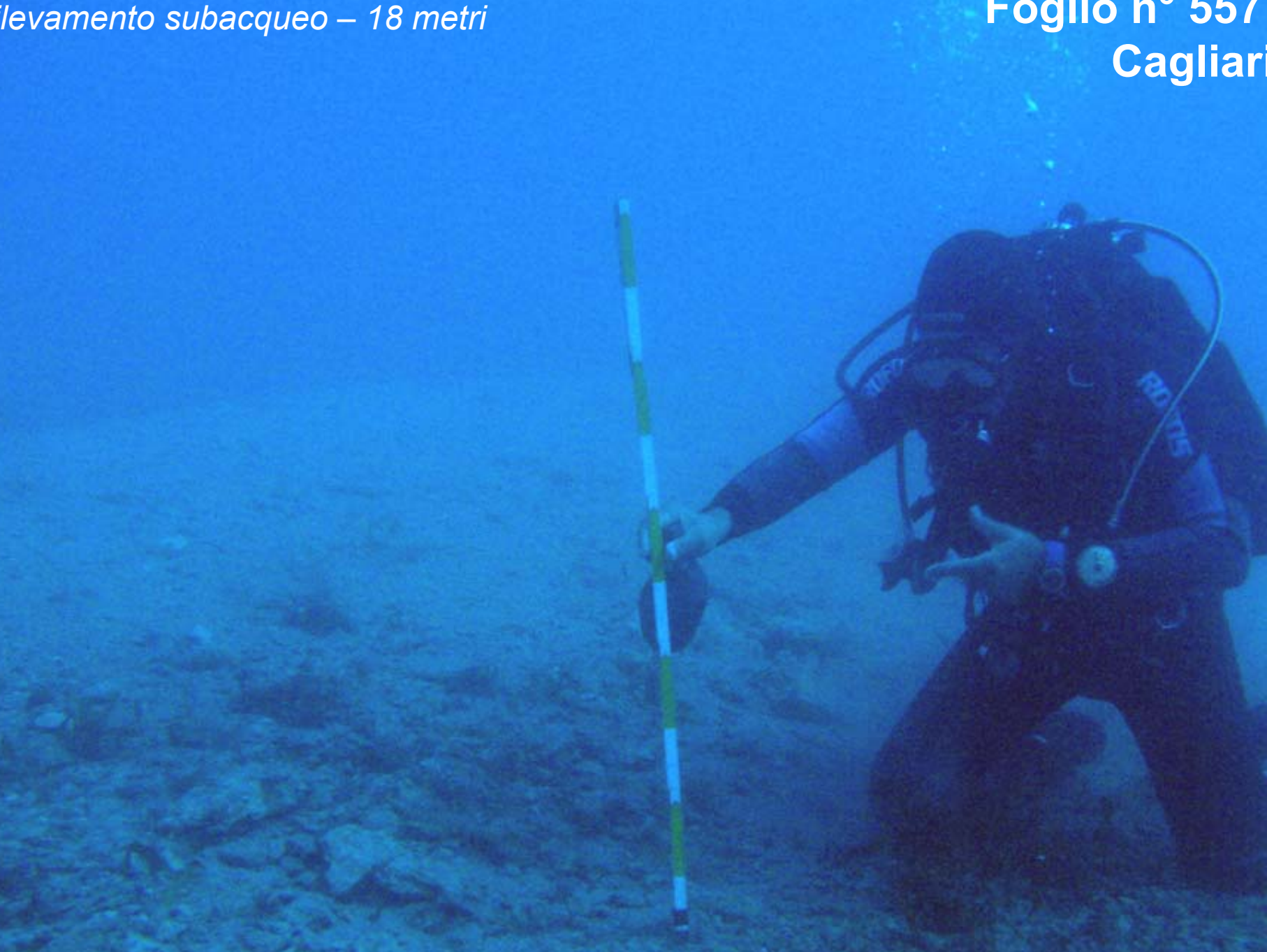
Staz. 3
dive

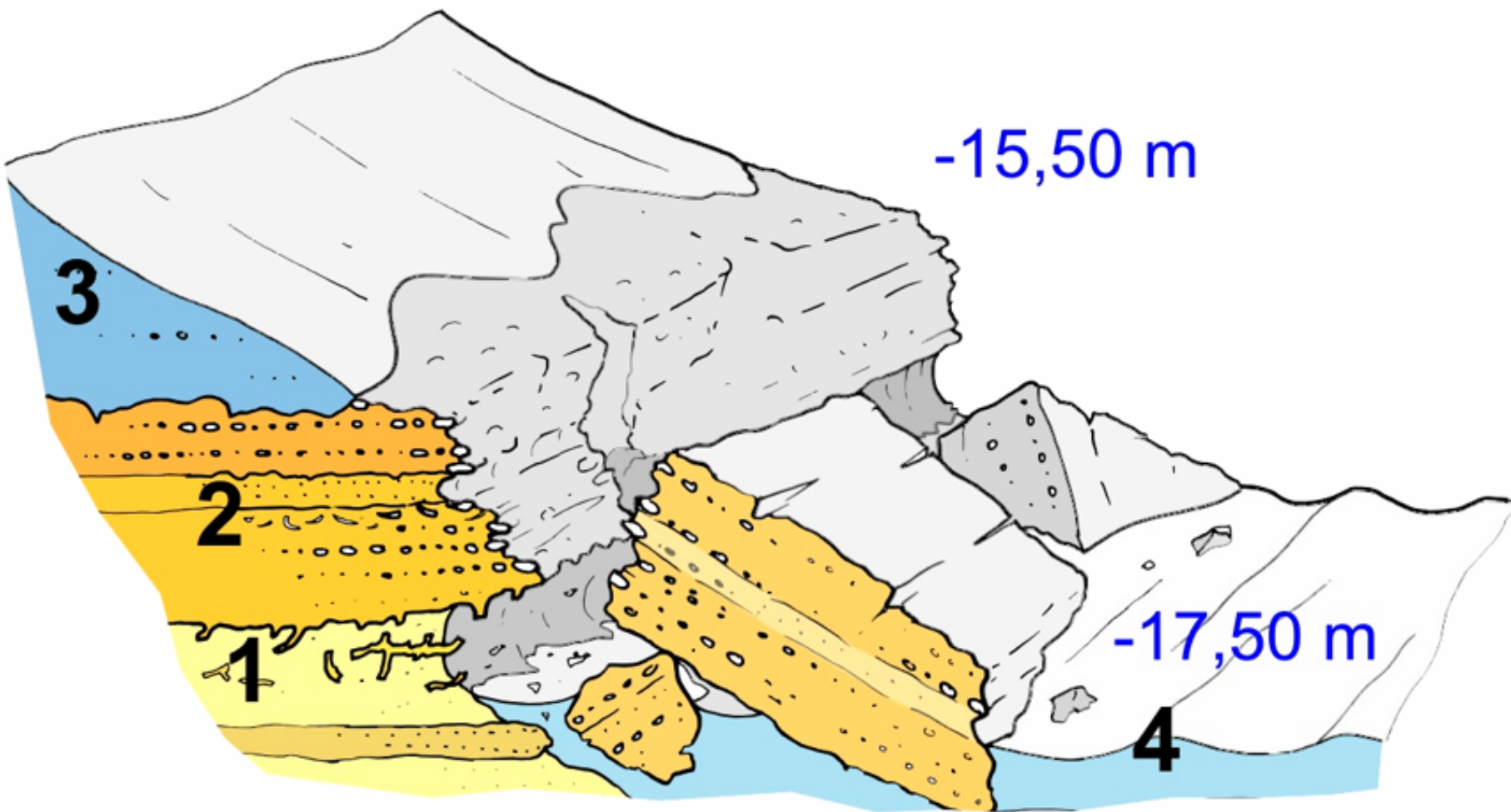
- 18 m

levamento subacqueo – 18 metri

Foglio n° 557

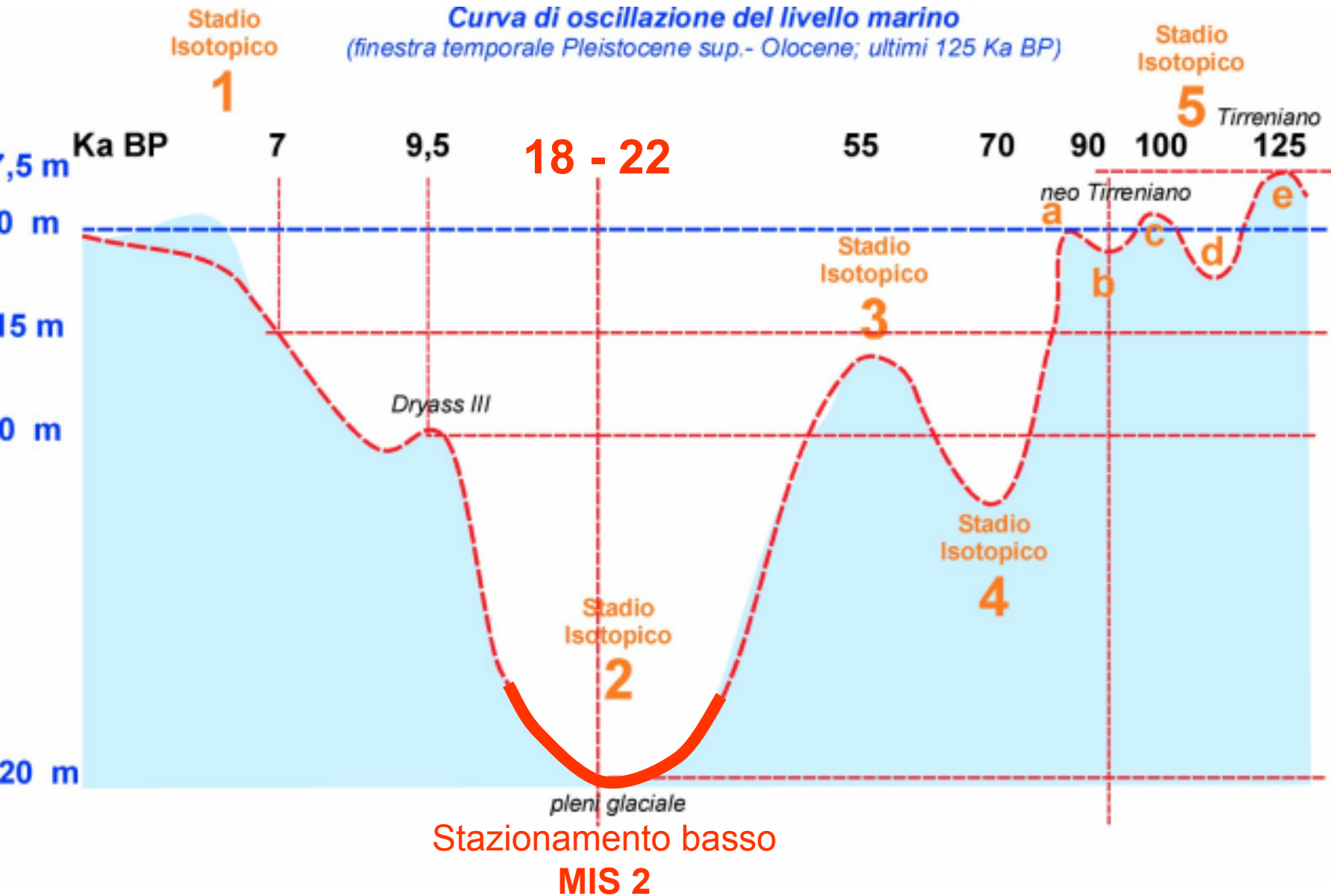
Cagliari



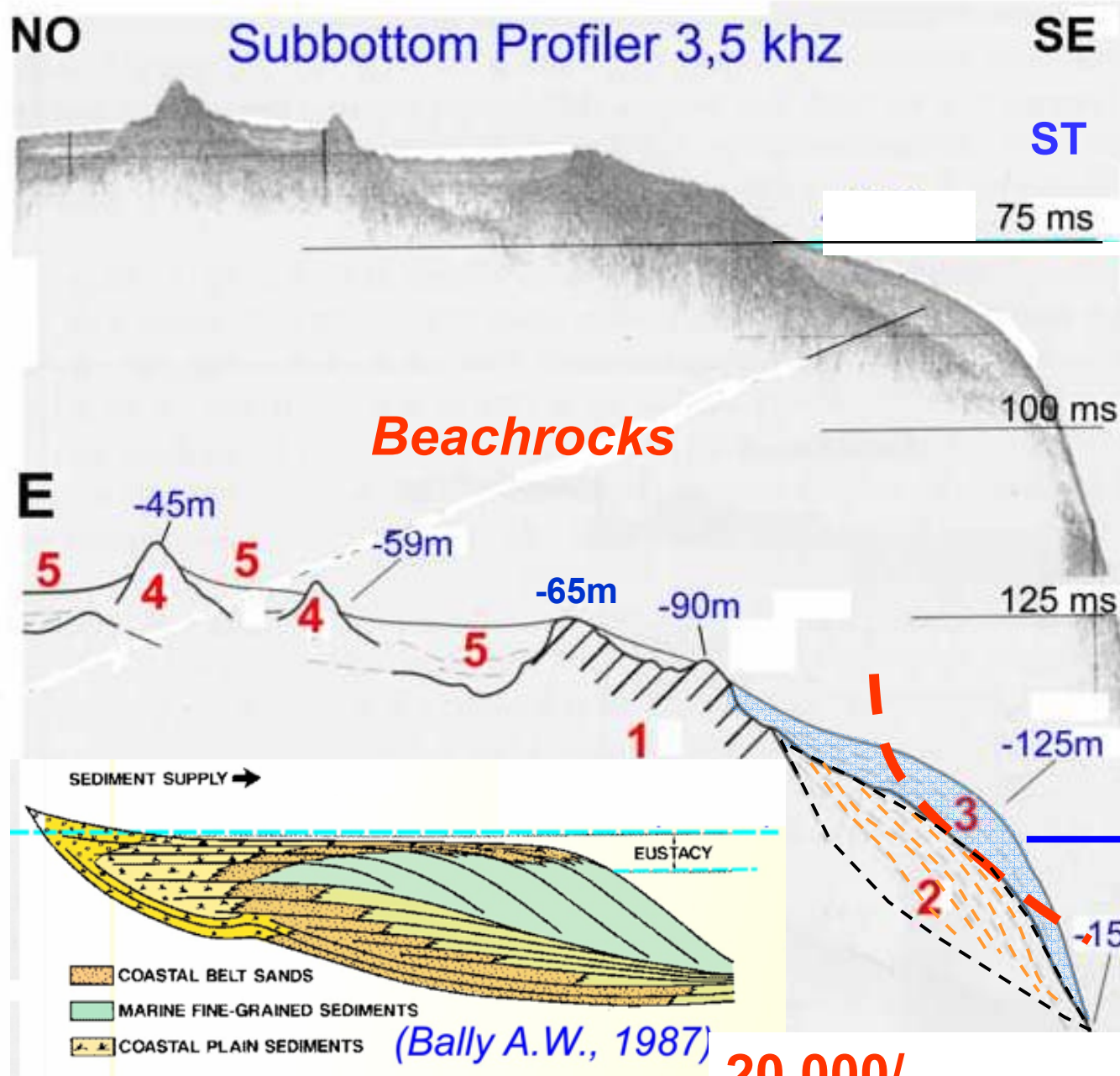


- 1) sands and sandstone with burrows (MIS 5?)
- 2) sandstones and conglomerates fossiliferous (MIS 5?)
- 3-4) sands, silty sands and Posidonia peats

Curva di oscillazione del livello marino
(finestra temporale Pleistocene sup. - Olocene; ultimi 125 Ka BP)



LGM MIS 2



tertiary bedrock;

*pleistocene deposits,
silt and silty clay*

*sandy silt submerged
depositional terrace
(Late Pleistocene MIS 2)*

*beach rock, sandstones
and conglomerates*

*(Yunger Dryass)
lagunal silty sands
(Yunger Dryass)*

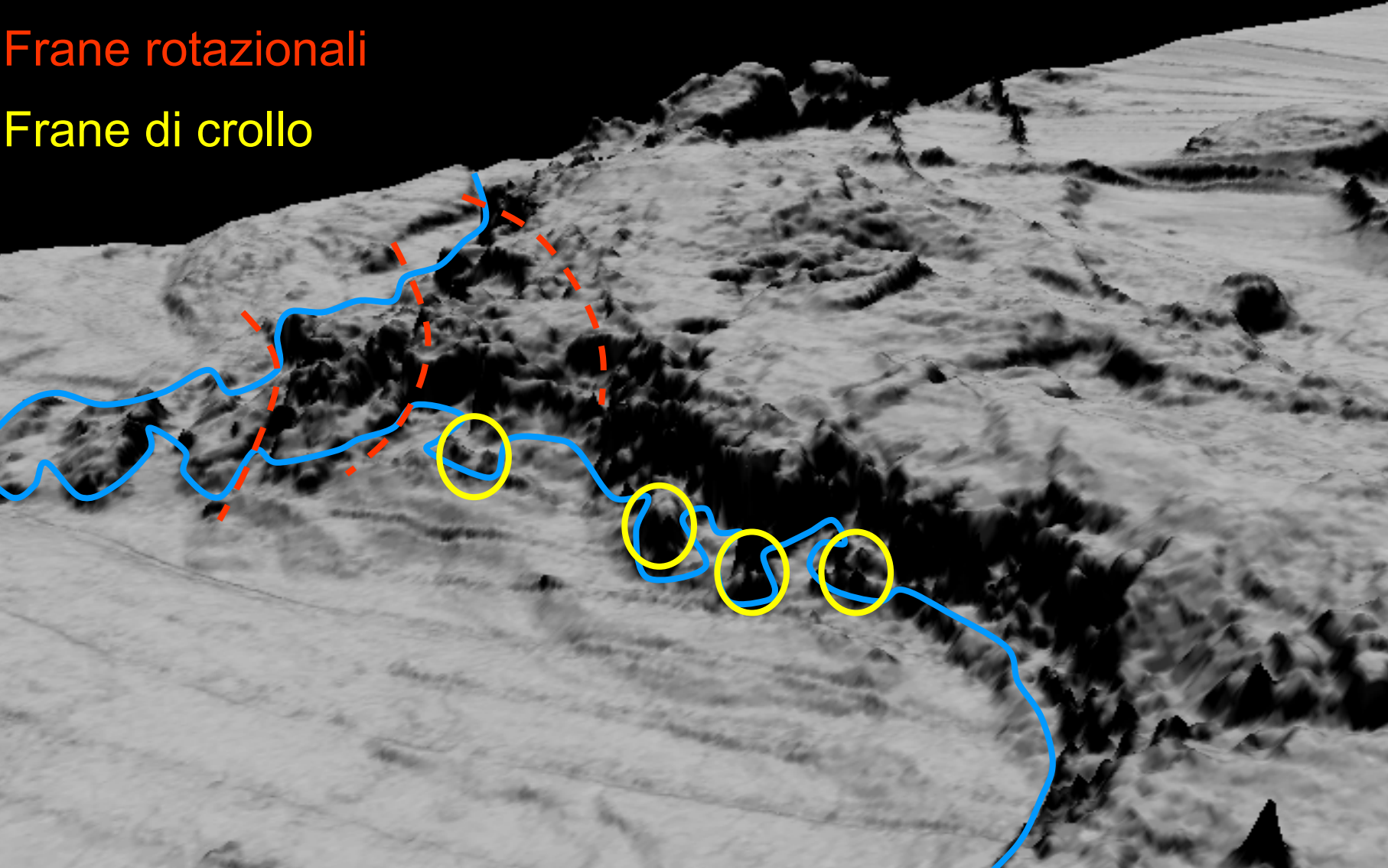
**20.000/
18.000 anni BP**

Linea di riva – 120m

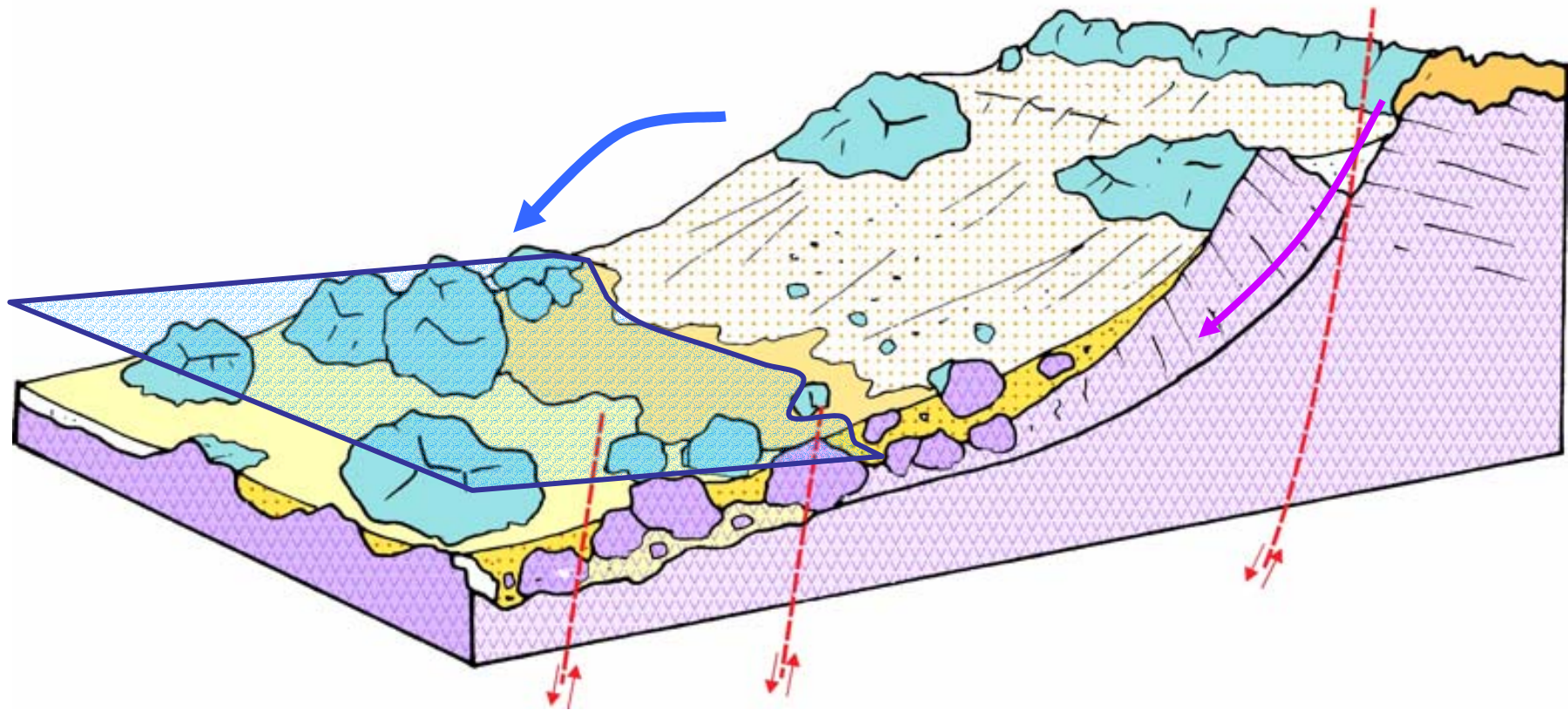
MIS 2

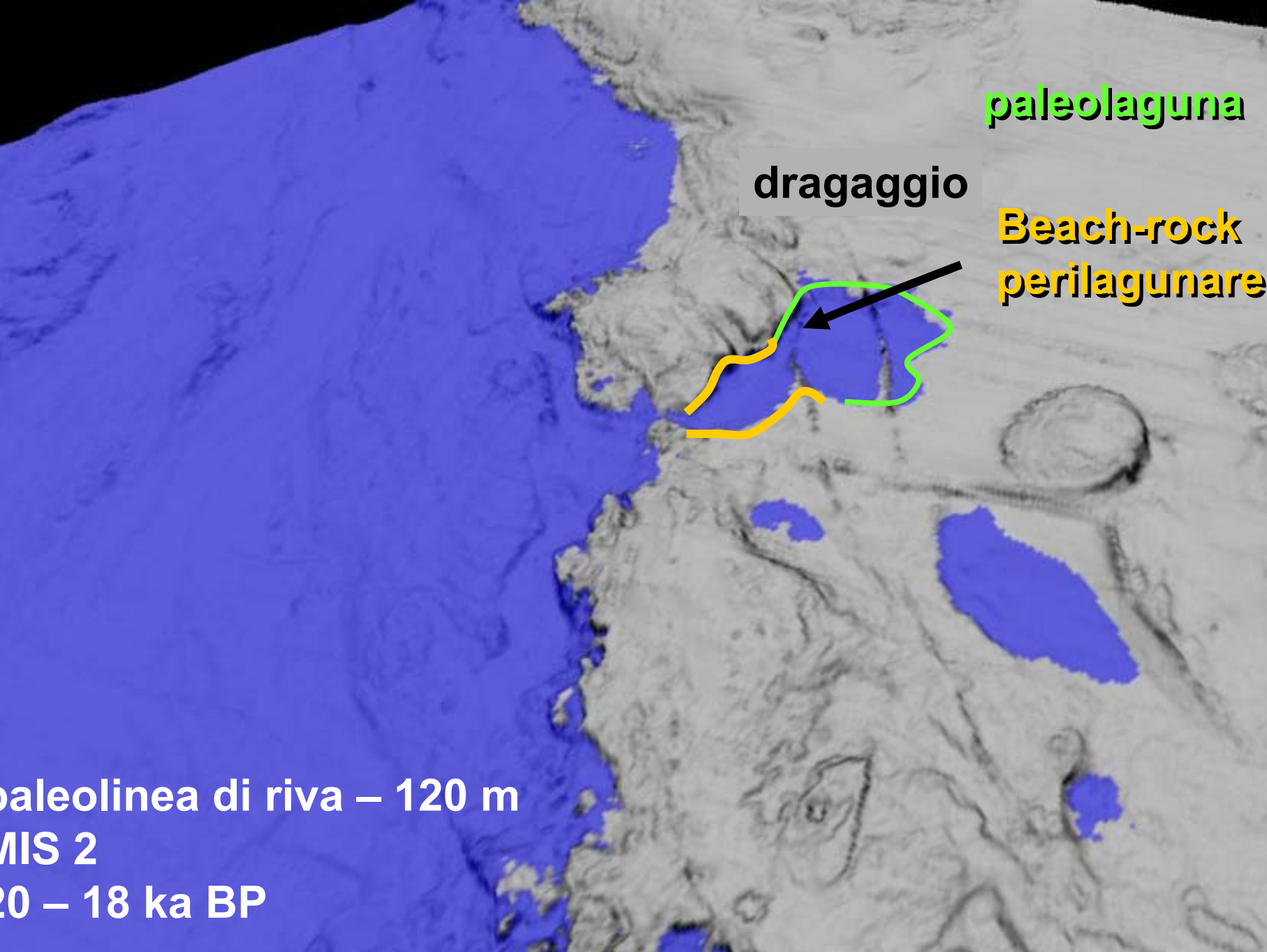
Frane rotazionali

Frane di crollo



Paleofalesia – 120 m
frane di crollo e frane rotazionali





paleolaguna

dragaggio

**Beach-rock
perilagunare**

**paleolina di riva – 120 m
MIS 2
20 – 18 ka BP**



Glycymeris sp



Mytilus galloprovincialis



Mytilus edulis



Cerastoderma



Timoclea



Pitar rudis



Turritella



Coralli colonia



Monocoralli



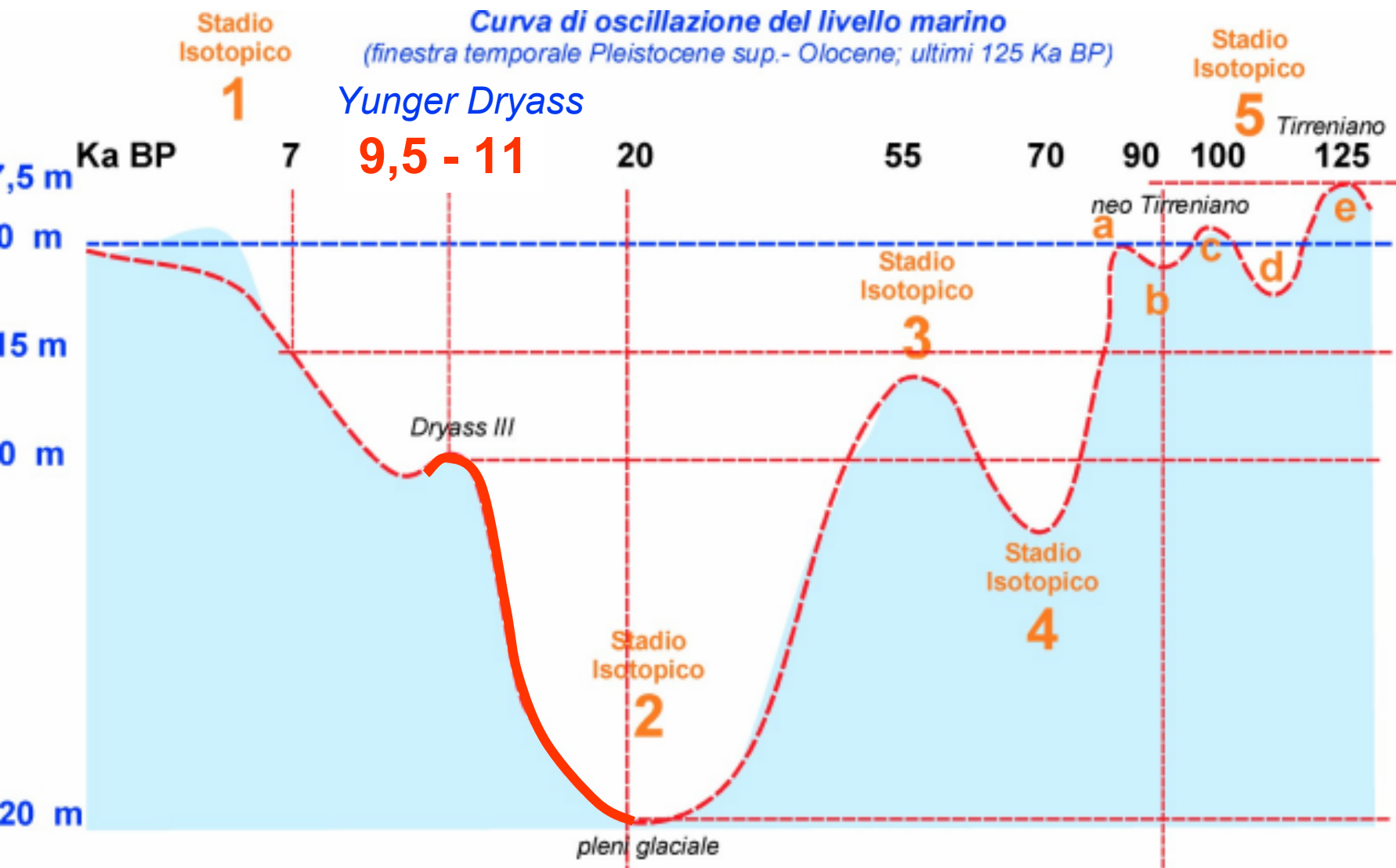
Gasteropodi turriculata

1 cm

frammento di beachrock
- 120 m

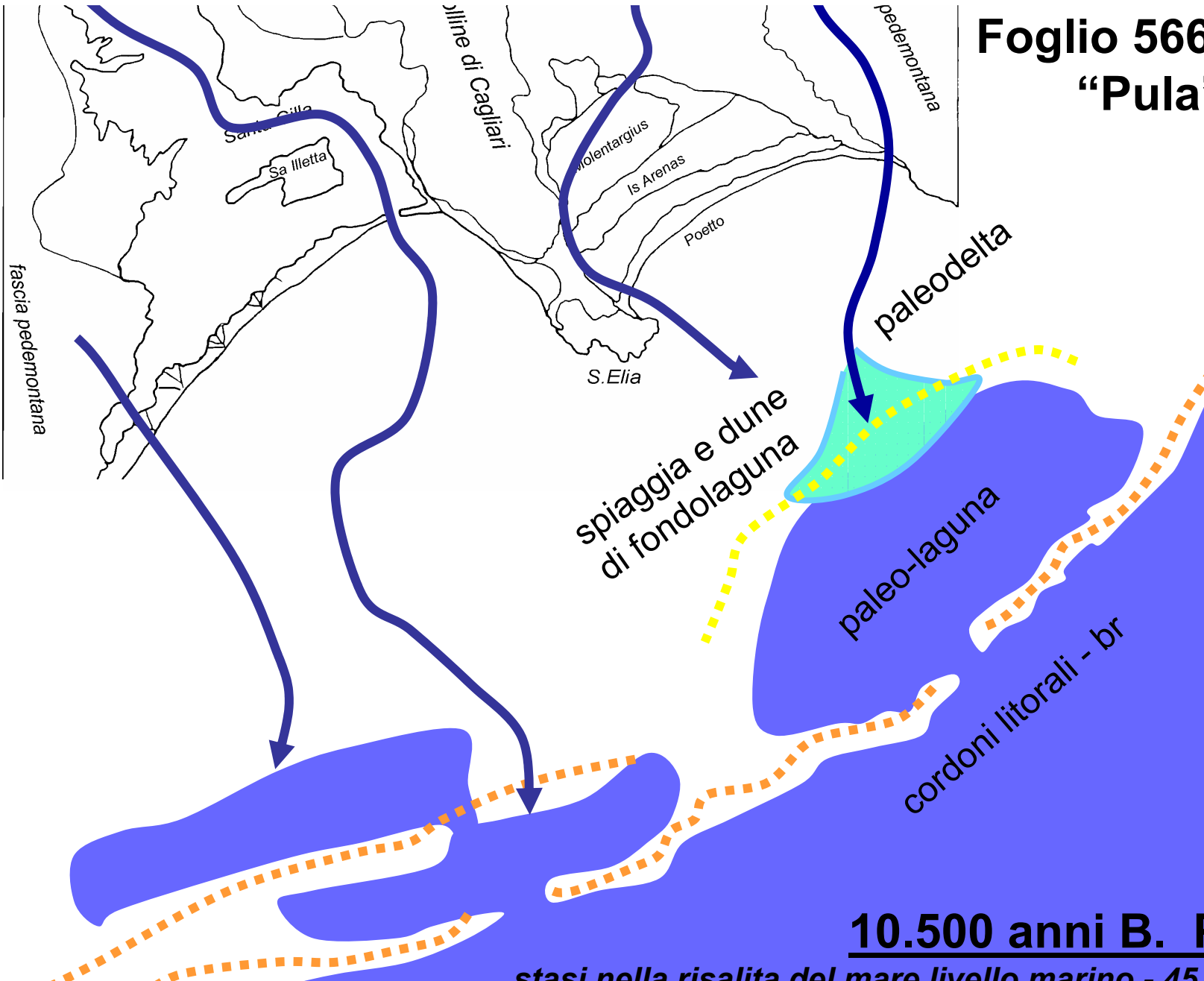






sistema deposizionale lagoon-barriera – Yungler Dryass

Foglio 566
"Pula"

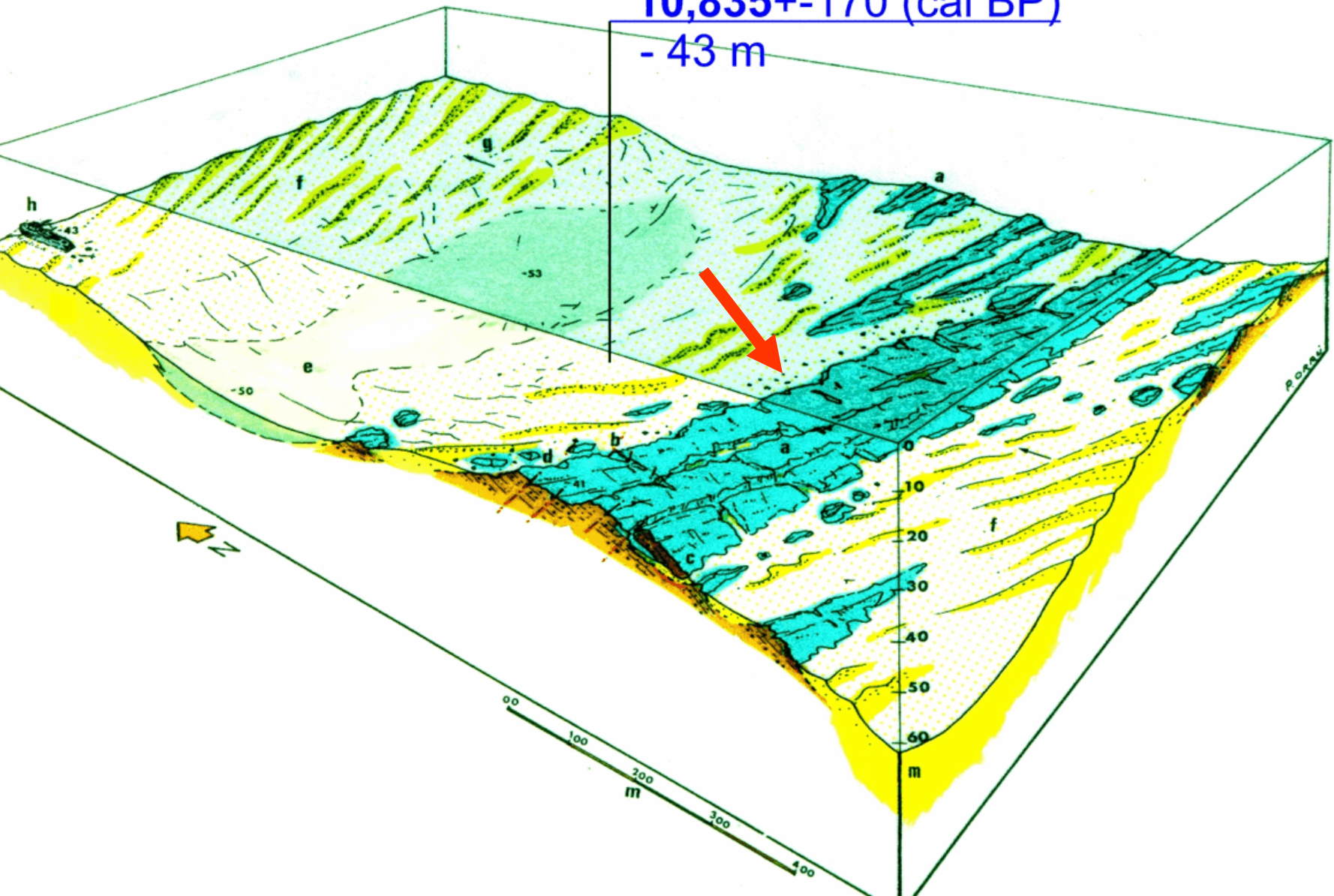


10.500 anni B. P.

stasi nella risalita del mare livello marino - 45

sistema deposizionale lagoon-barriera – Younger Dryass

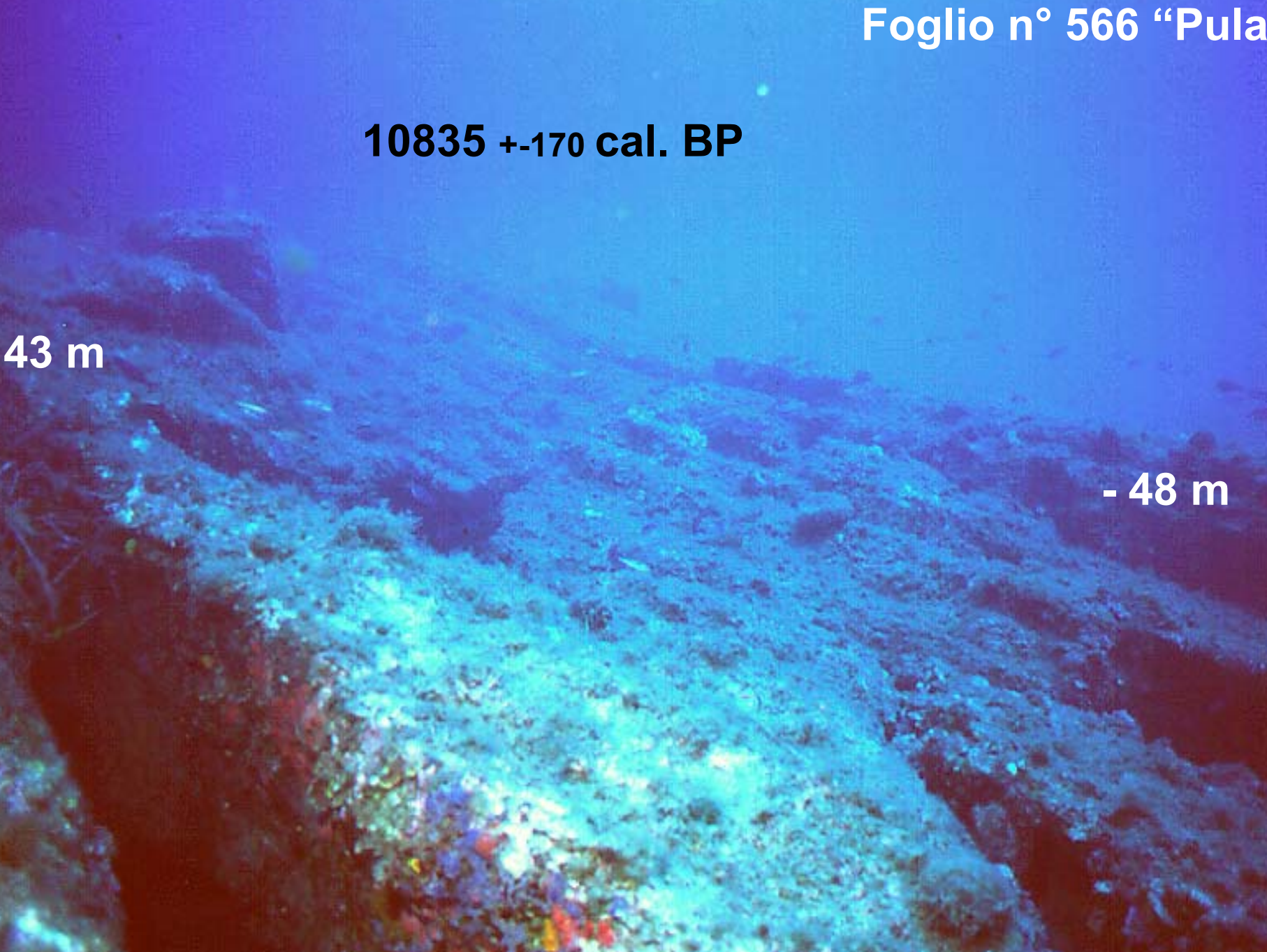
10,835±170 (cal BP)
- 43 m

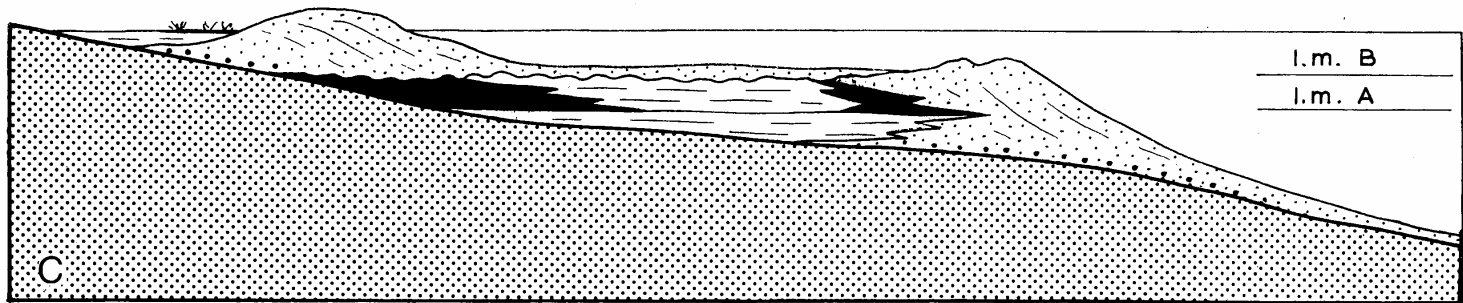
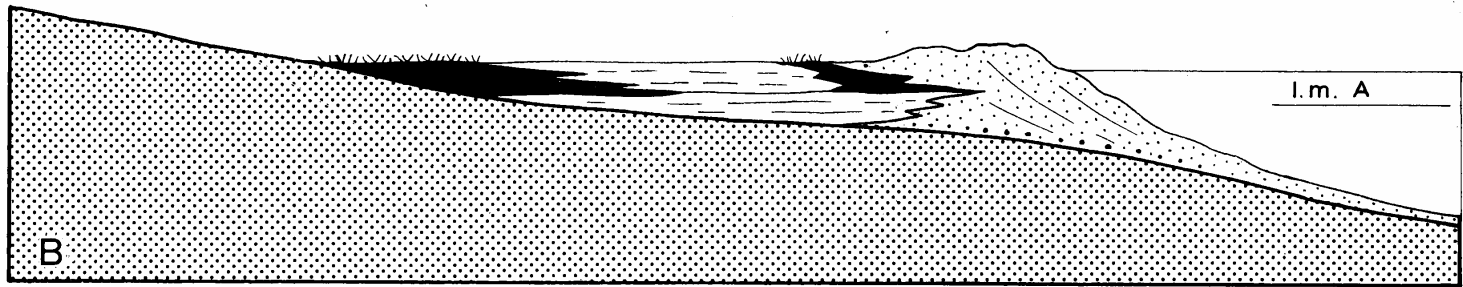
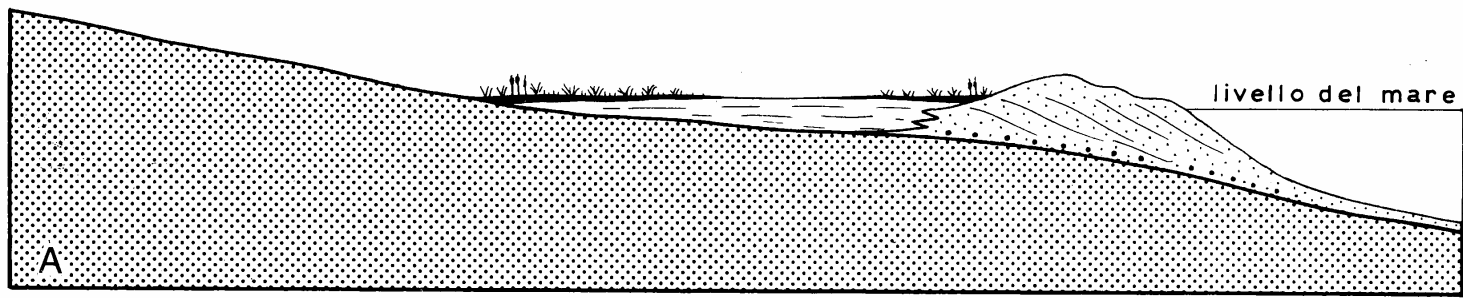


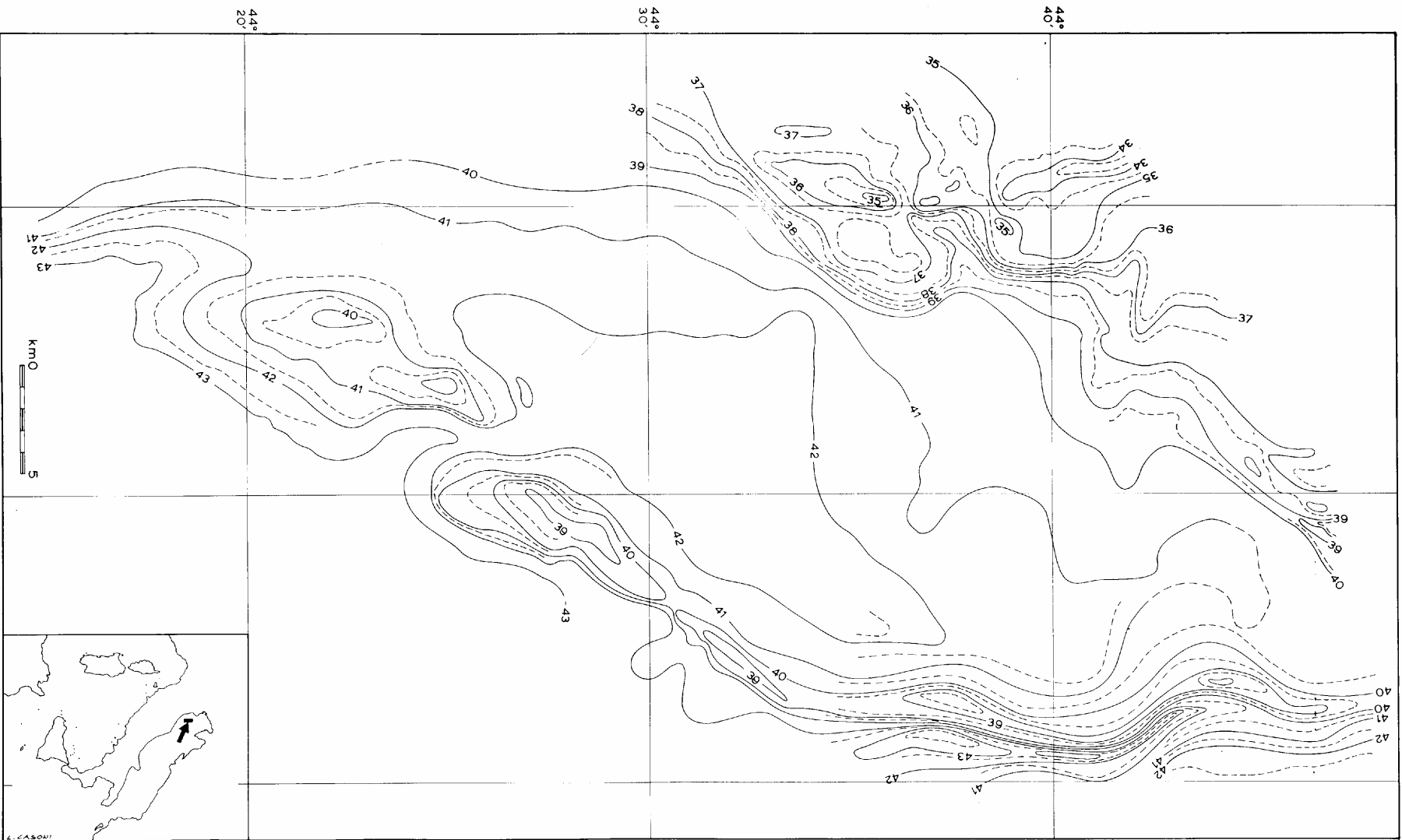
10835 \pm 170 cal. BP

43 m

- 48 m

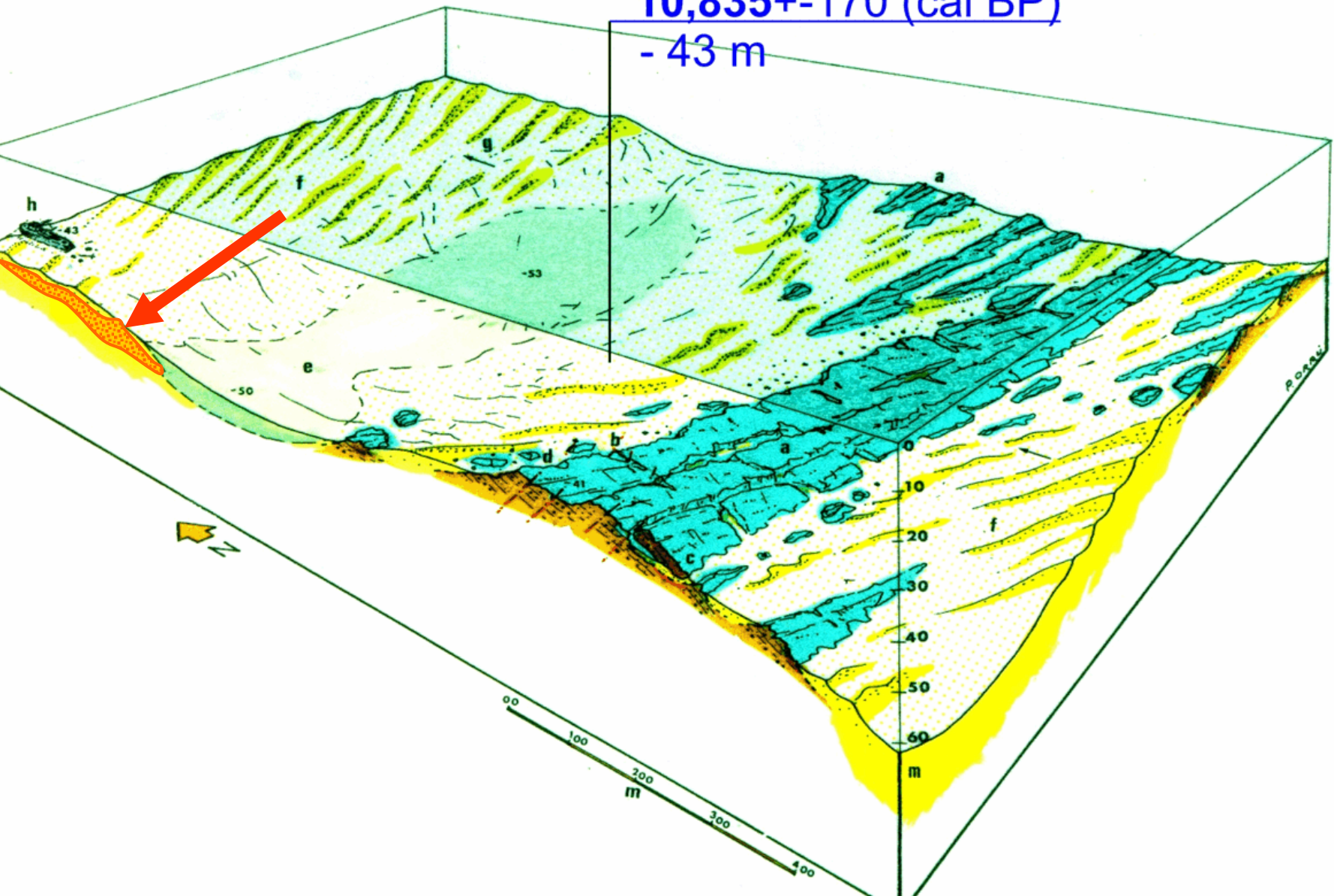


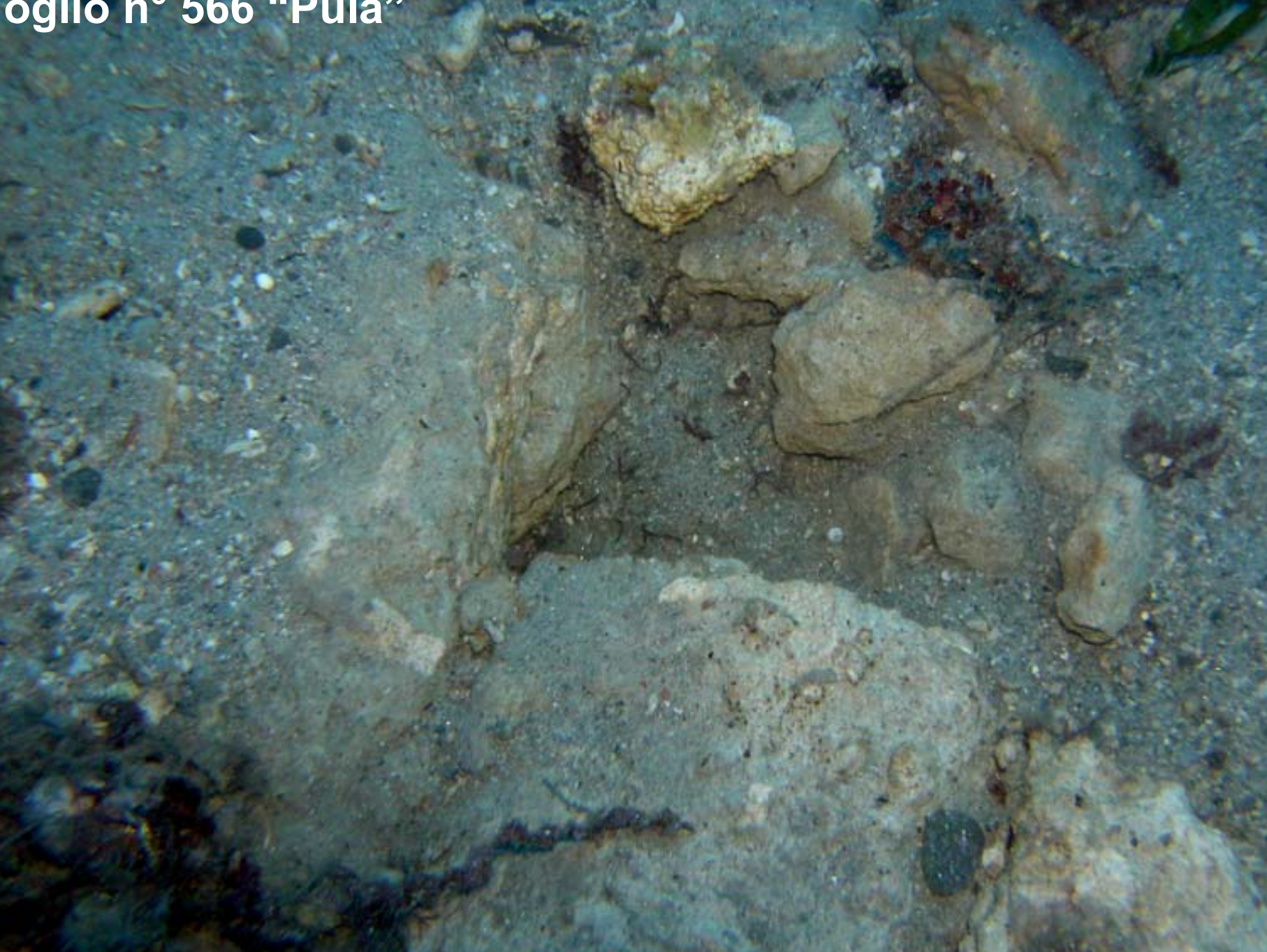




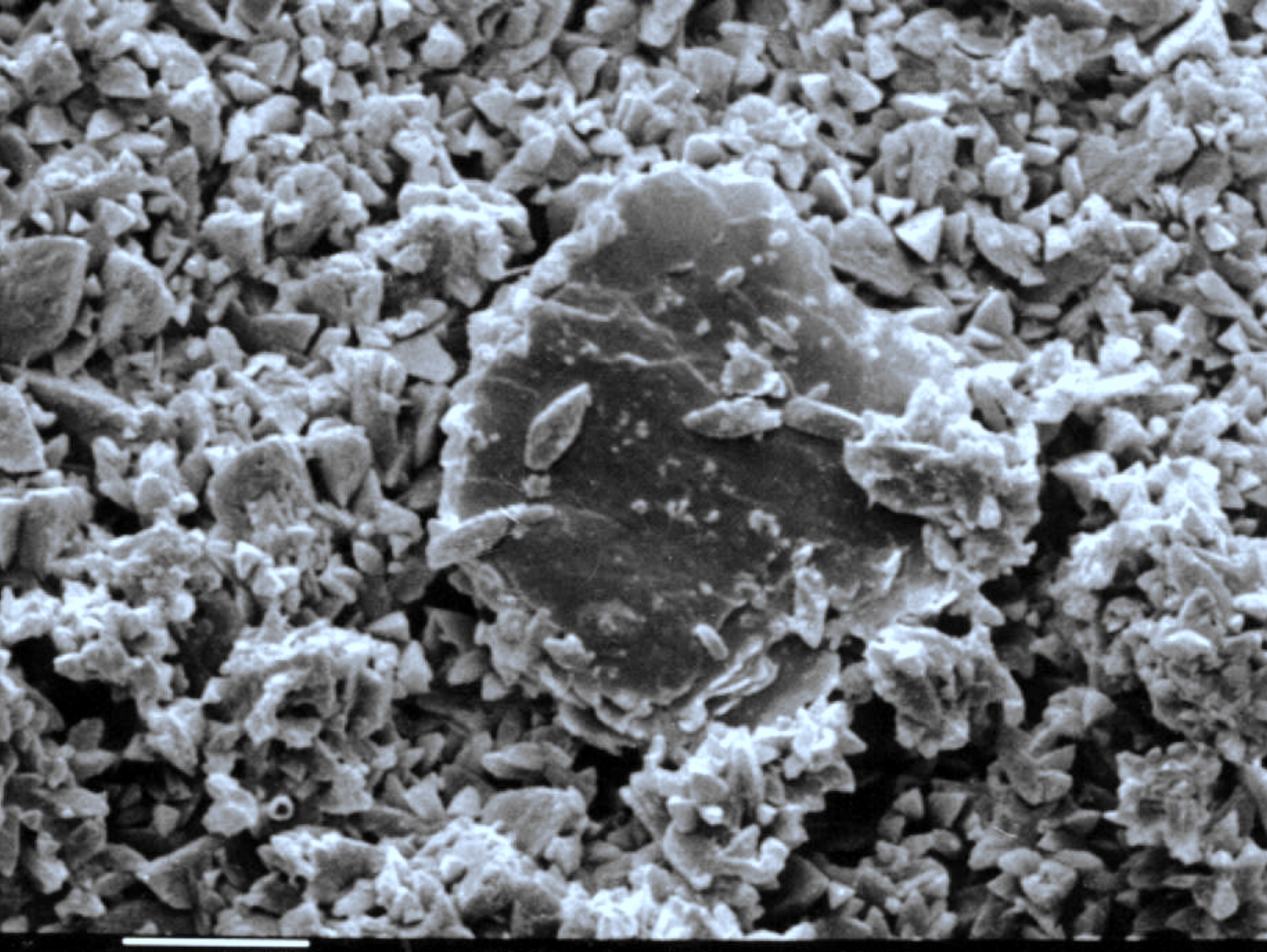
sistema deposizionale lagoon-barriera – Younger Dryass

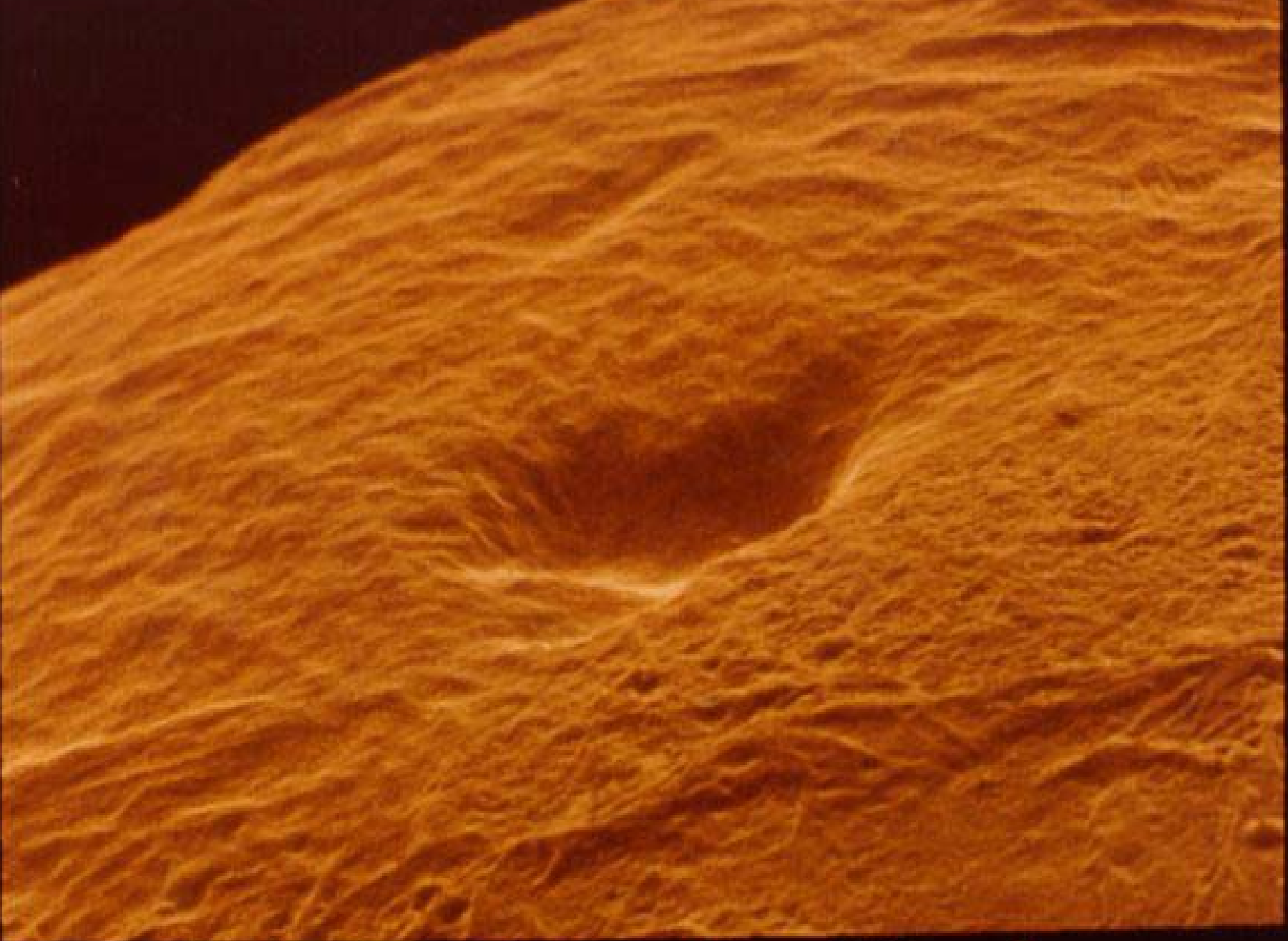
10,835±170 (cal BP)
- 43 m











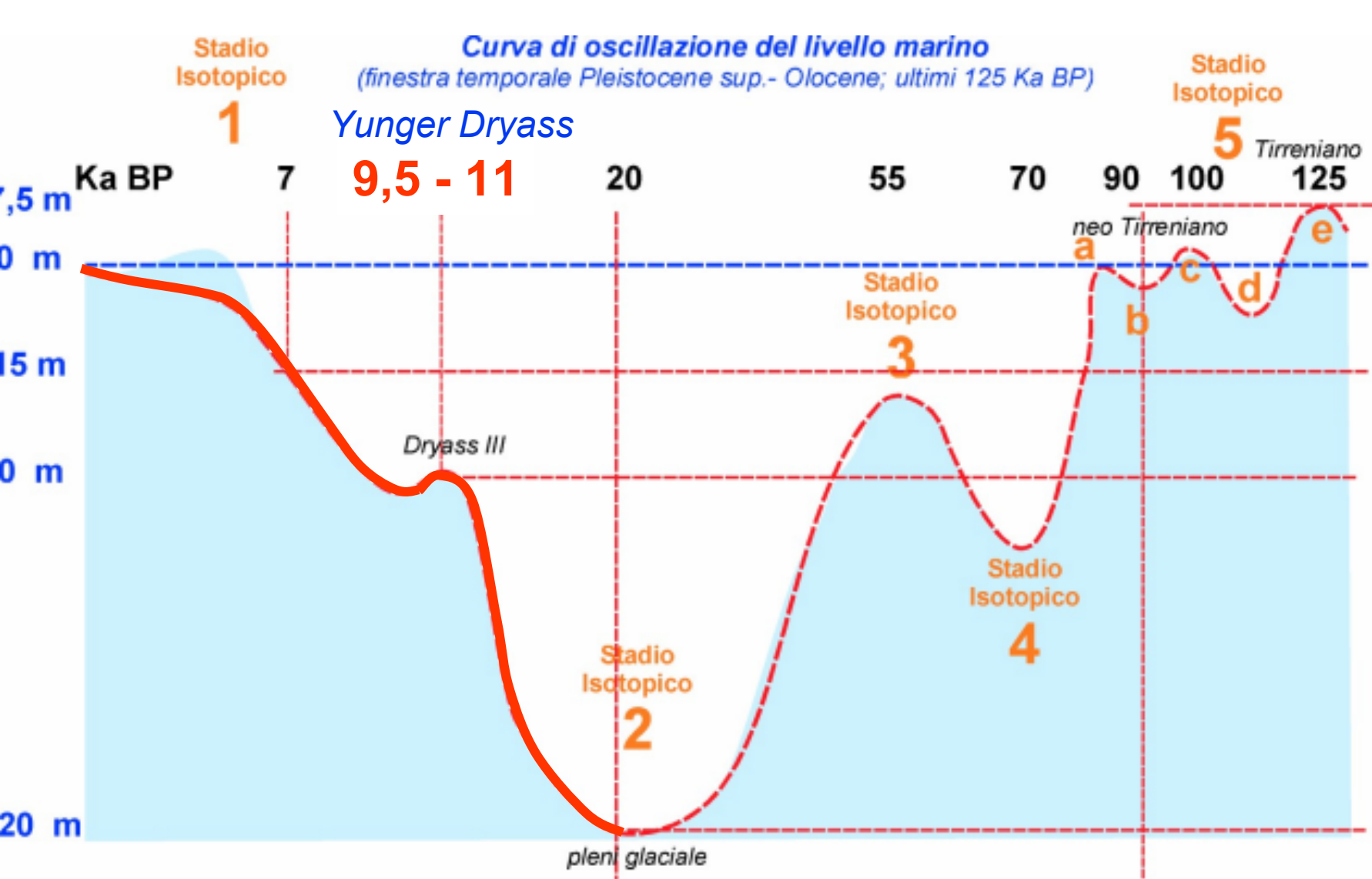
10µm

10KV

01

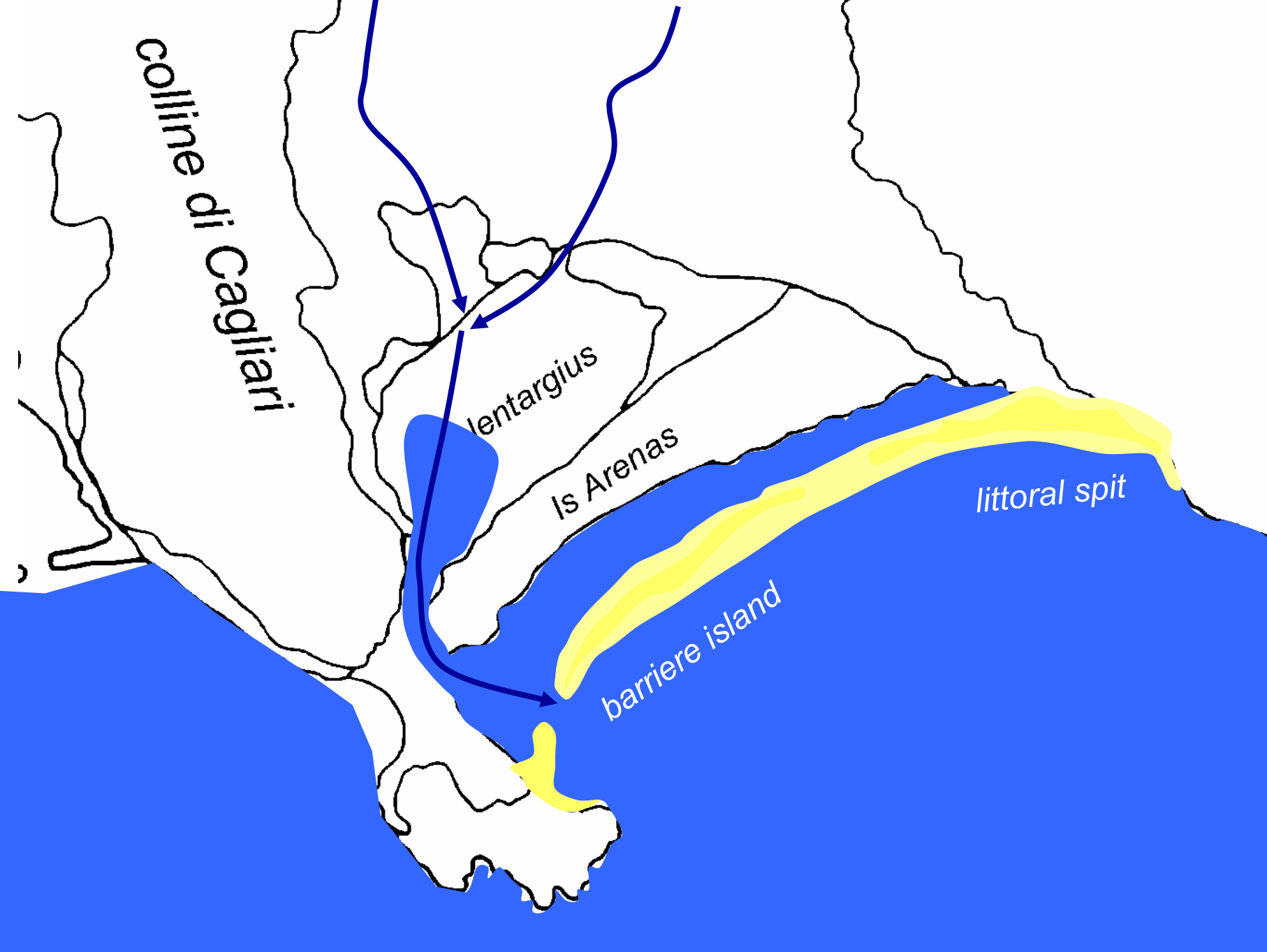
039

S









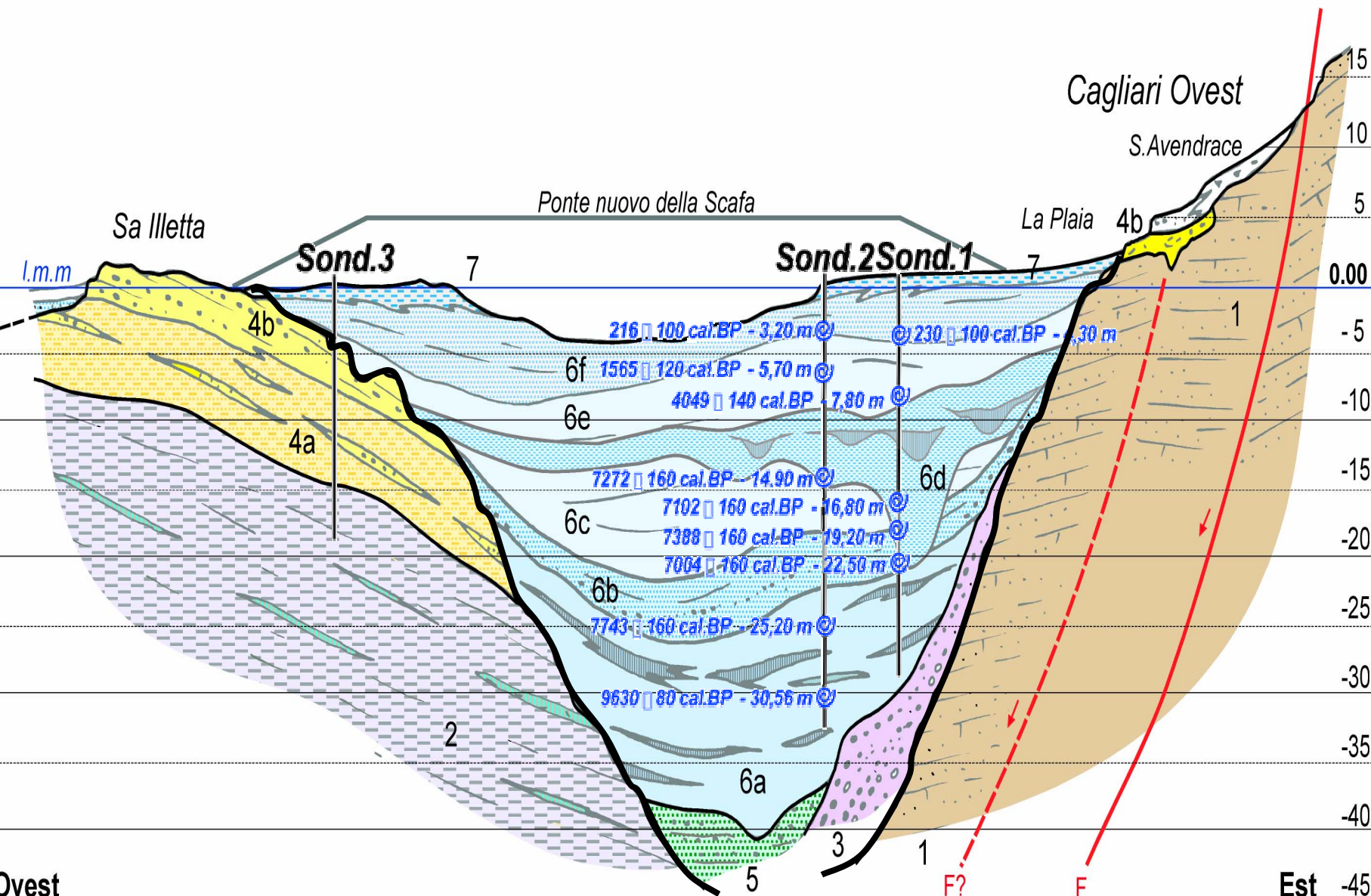
colline di Cagliari

lentargius

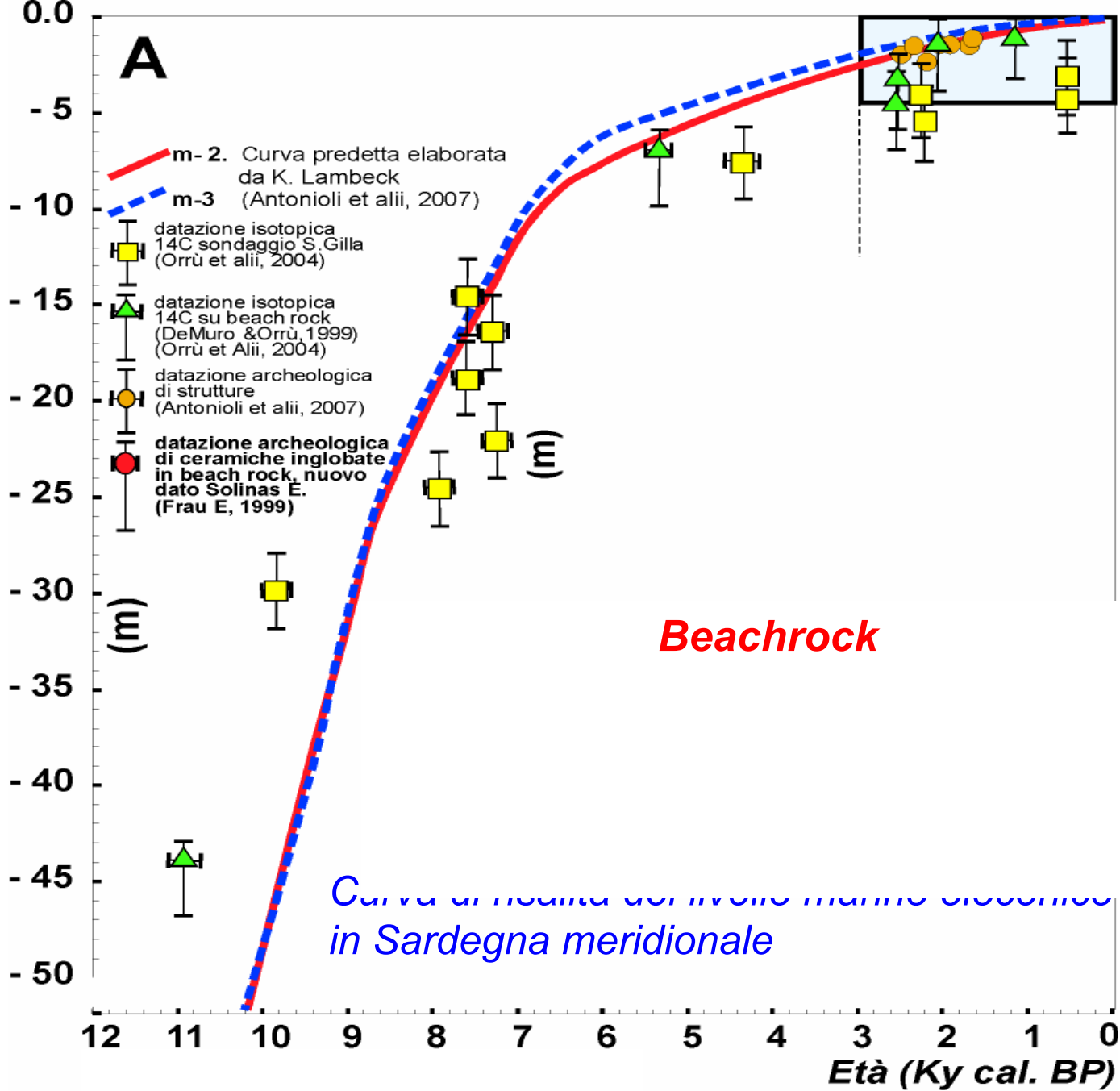
Is Arenas

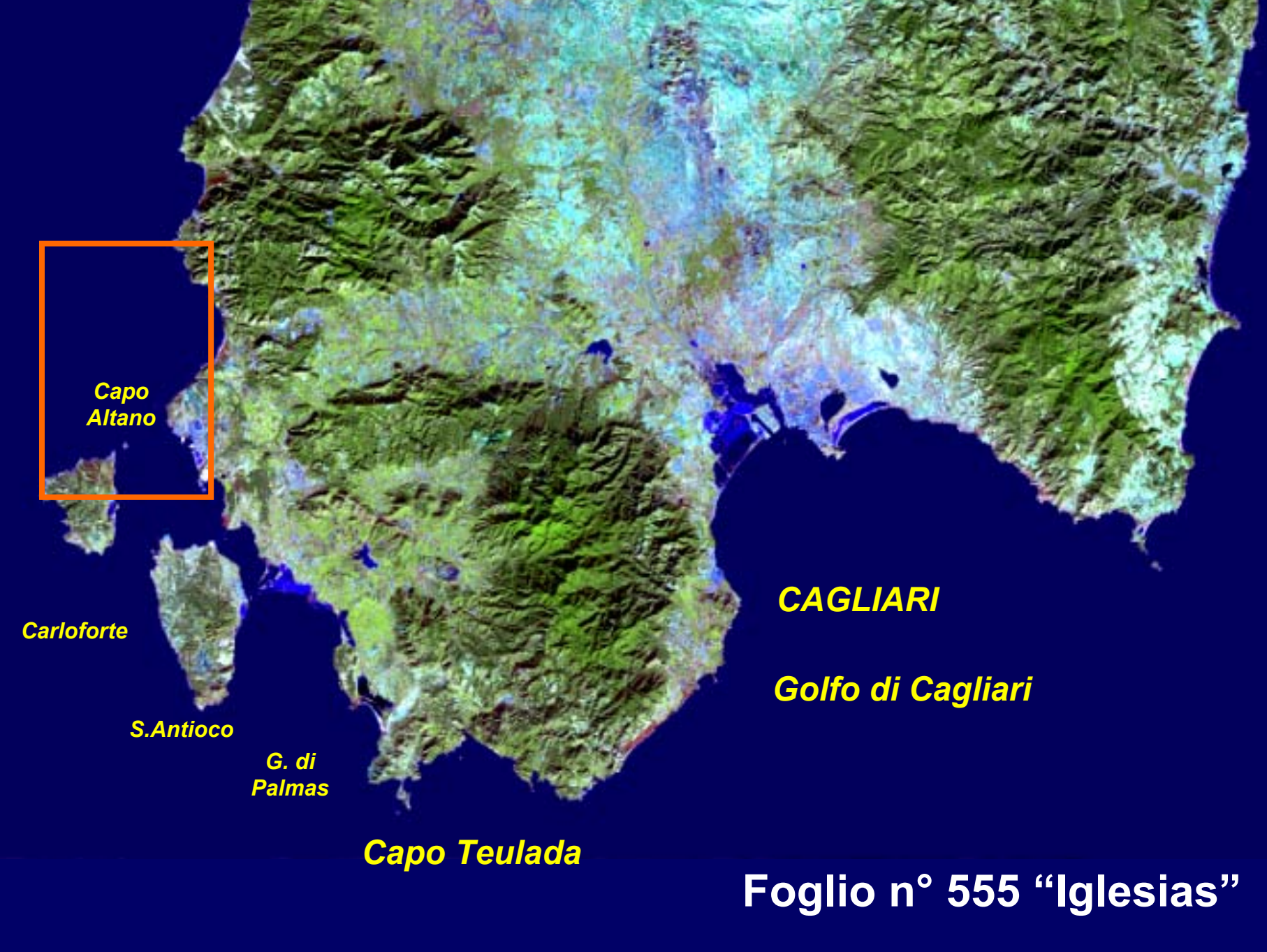
barriere island

littoral spit



© - datazioni isotopiche CAMS - Lab. Geochron, Krueger E. - Cambridge (U.S.A)





**Capo
Altano**

Carloforte

S. Antioco

**G. di
Palmas**

Capo Teulada

CAGLIARI

Golfo di Cagliari

Foglio n° 555 "Iglesias"



Calasetta

San Giovanni Suergiu

Laguna di Sant'Antioco

Punic-Roman submerged port

Punic-Roman Civitas



Sant'Antioco

Tibula Sulci submerged road

Territorium Sulcitanum

Tratalias

Ponti Roman beach rock

Porto Botte

Is Pruinis

Golfo di Palmas

Port'e Su Trigu

Turri

Capo Sperone



(Coghinas)

Turris Libisonis
(Porto Torres)

Cornus
(Bosa)

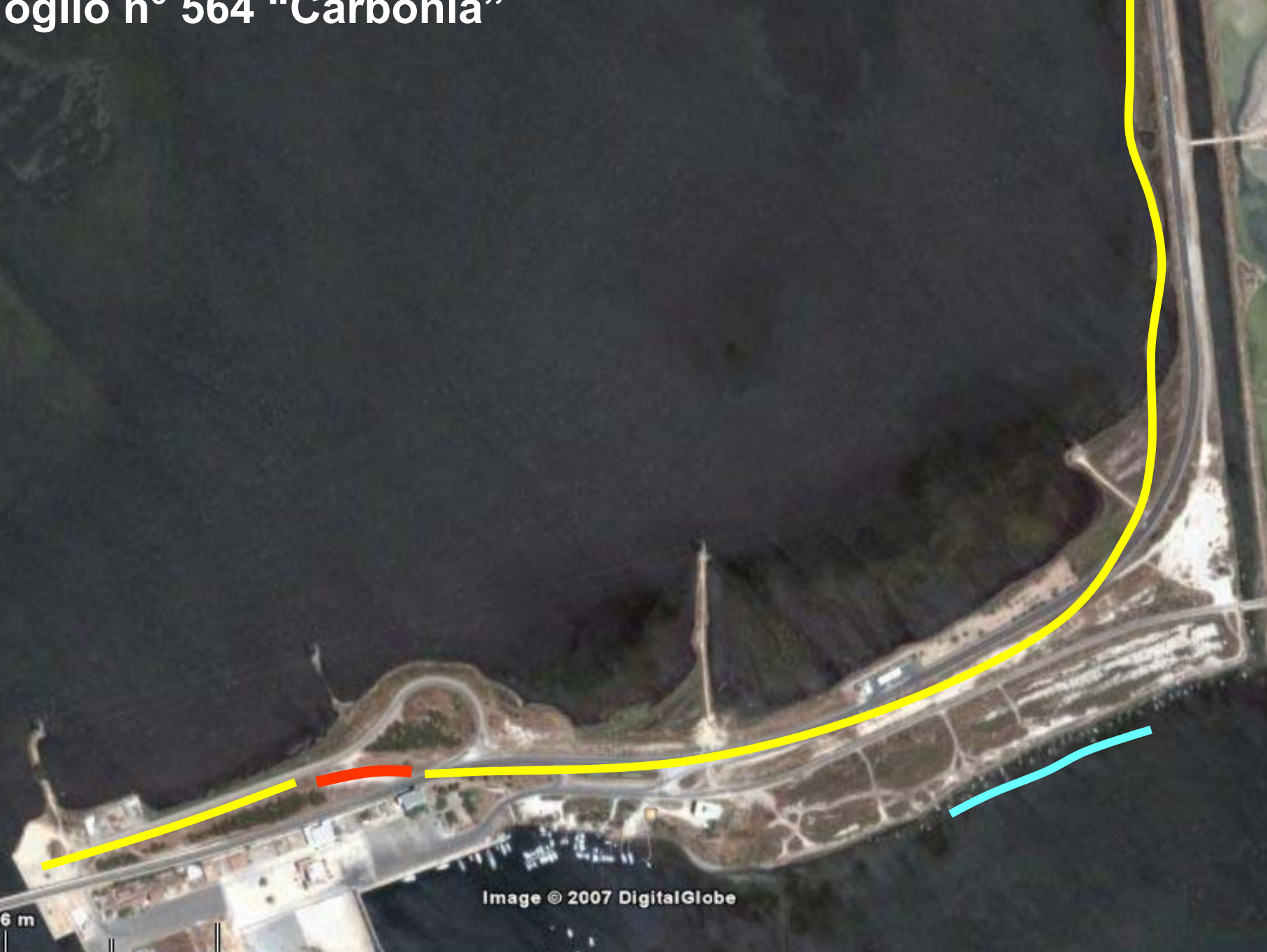
Othoca
(Santa Giusta)

Neapolis
(Terralba)

Metalla
(Fluminimaggiore)

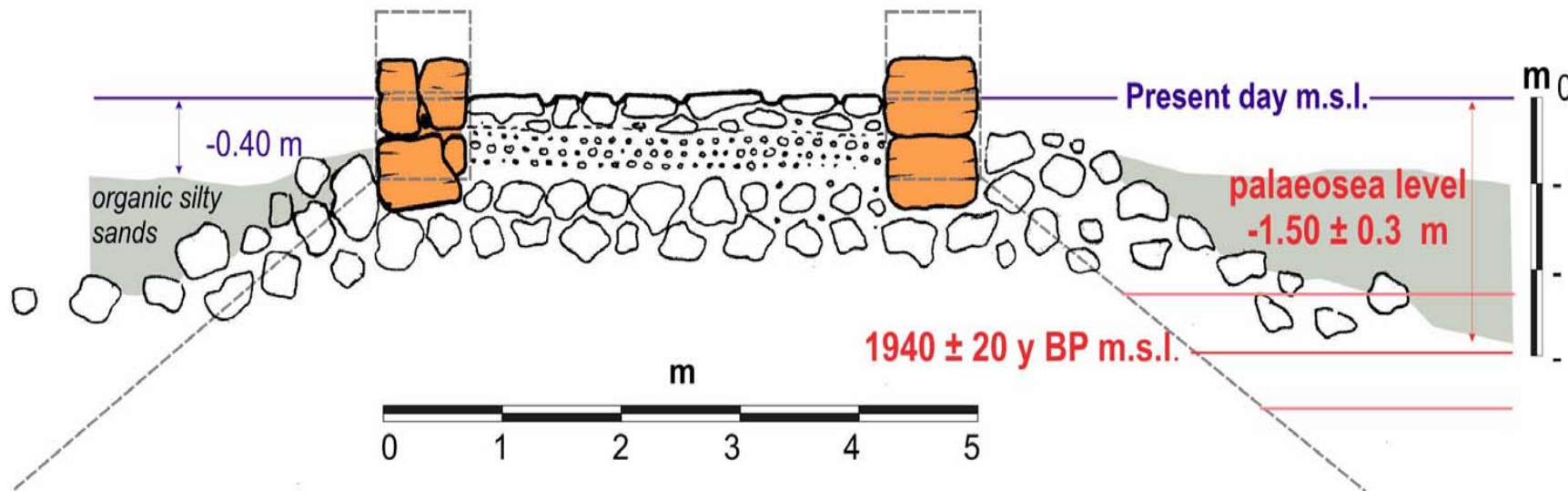
Sulci
(Sant'Antioco)

oglio n° 564 "Carbonia"

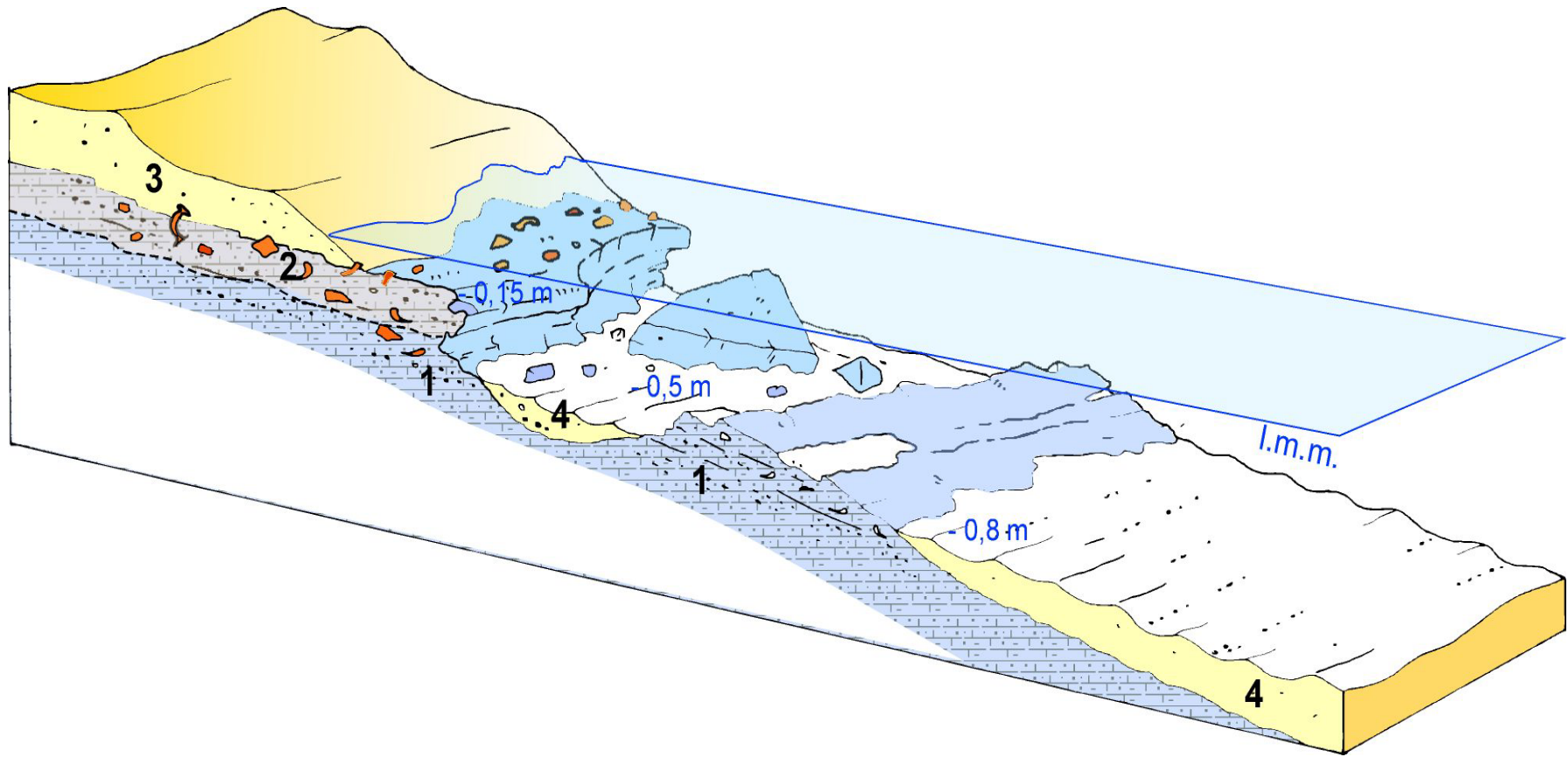


6 m

Image © 2007 DigitalGlobe







Terastoderma edule edule



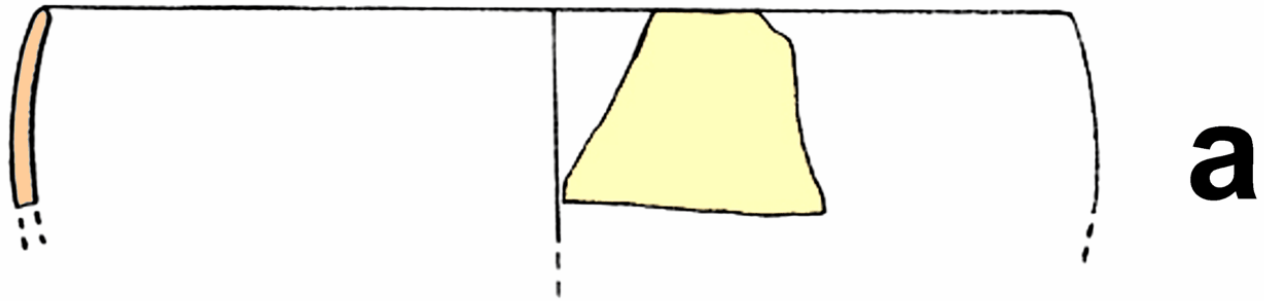


gasteropodi turricolata (intertidali) e gasteropodi pulmonata (supratidali)

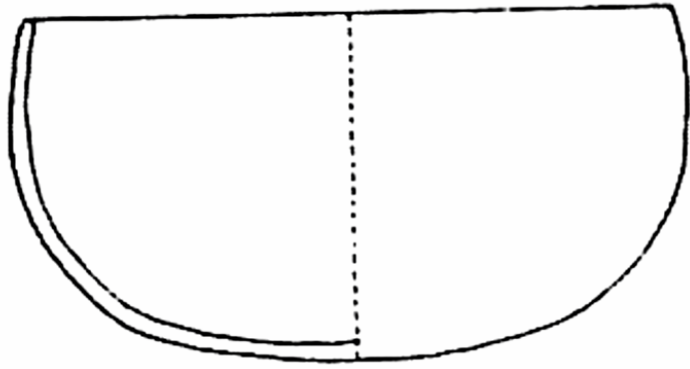
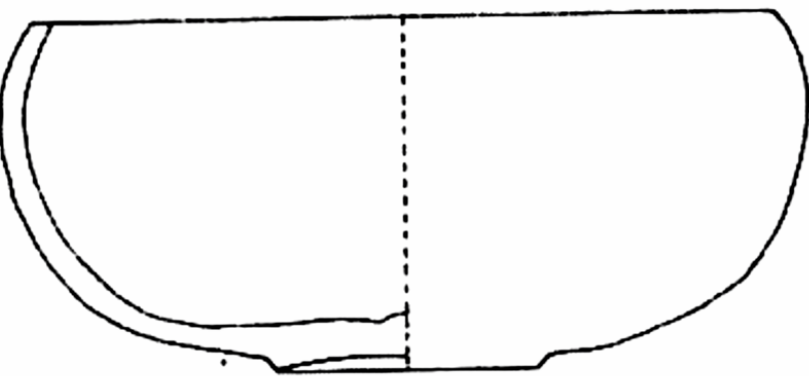
C



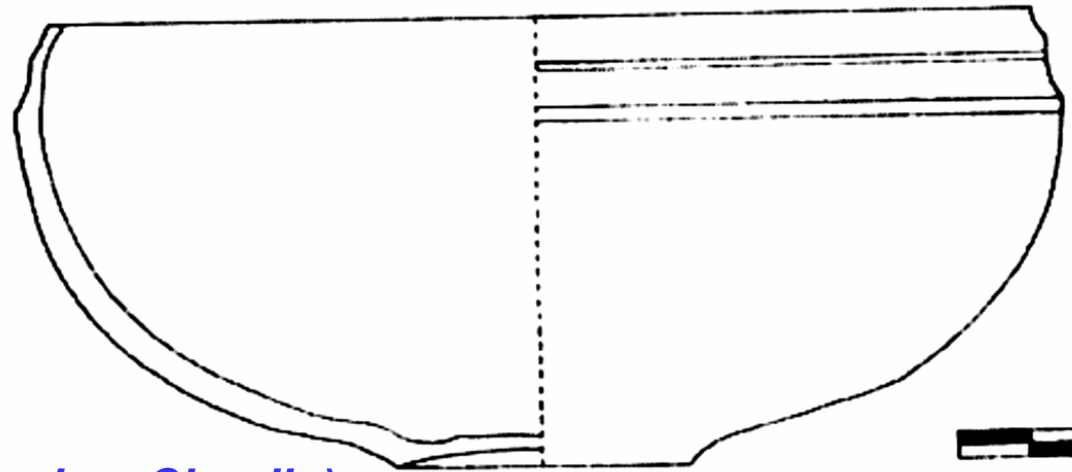




a



b



1940_{+/-} 20
(periodo tra Tiberio e Claudio)

