



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

Tesi di Laurea Triennale  
in  
Scienze Geologiche



DIPARTIMENTO  
DI GEOSCIENZE



A satellite map of the Mediterranean region, showing the coastline of Europe and Africa, and the islands of the Aegean Sea. The map is rendered in green and brown tones to represent vegetation and terrain. Overlaid on the map in large yellow capital letters is the title of the thesis.

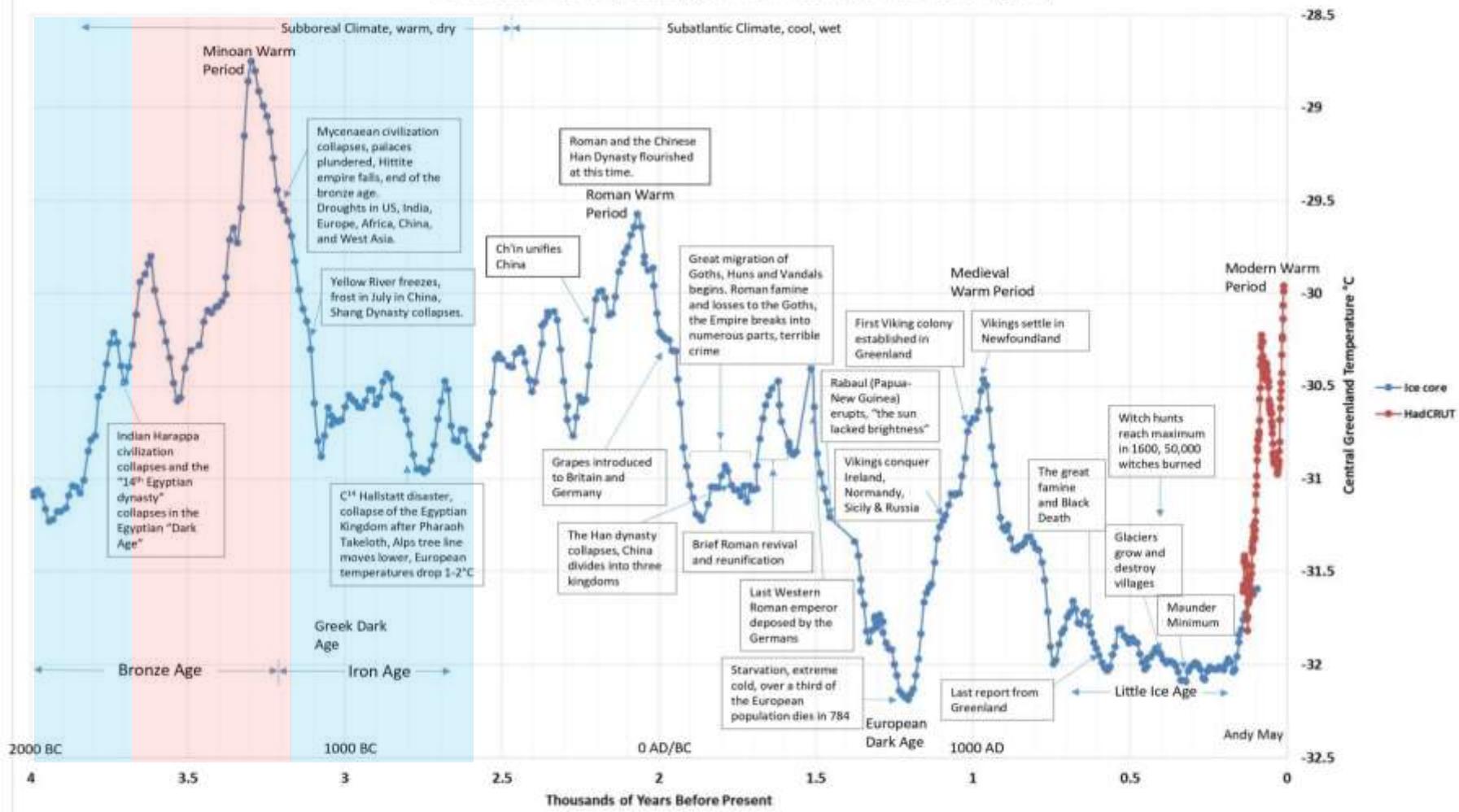
# IL PERIODO CALDO MINOICO

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Relatore: Luca Capraro



Il Minoan Warm Period ( XVI-X B.C.) è una fase calda compresa tra l'Egyptian Dark Age e Greek Dark Age

Central Greenland Temperature, 4,000BP to Present (Modified from Alley, 2004)



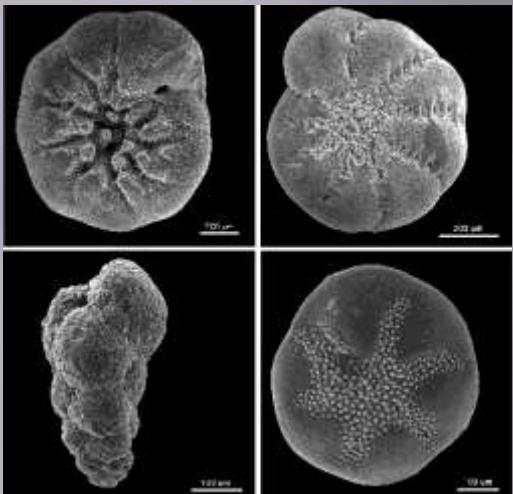
# Conseguenze

- Aumento delle Temperature
- Più campi coltivabili  
(olivi, viti, cereali e alberi da frutto)
- Più cibo , meno carestie e  
condizioni favorevoli per la vita



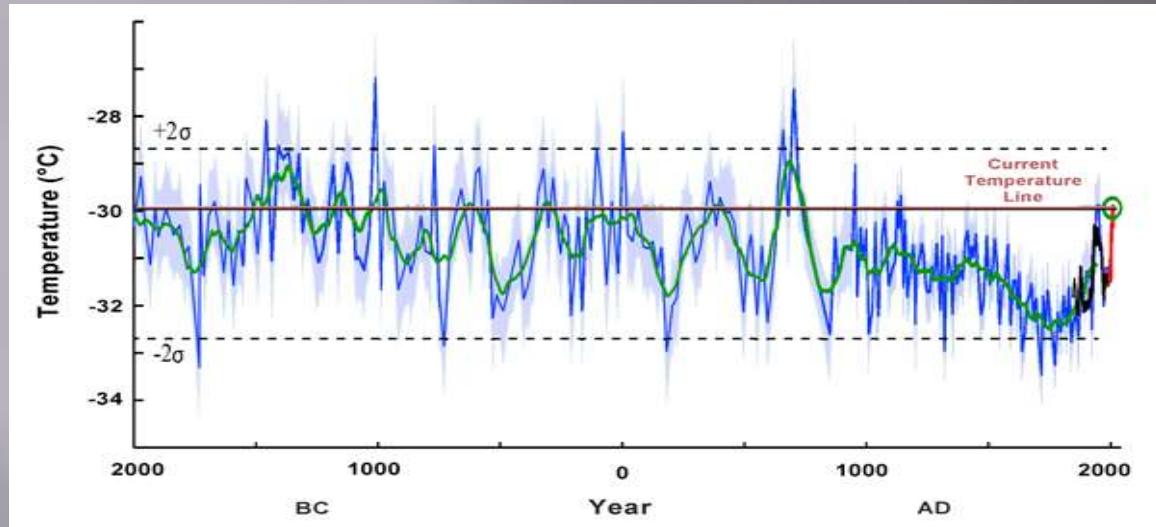
Incremento demografico

# Archivi paleoclimatici



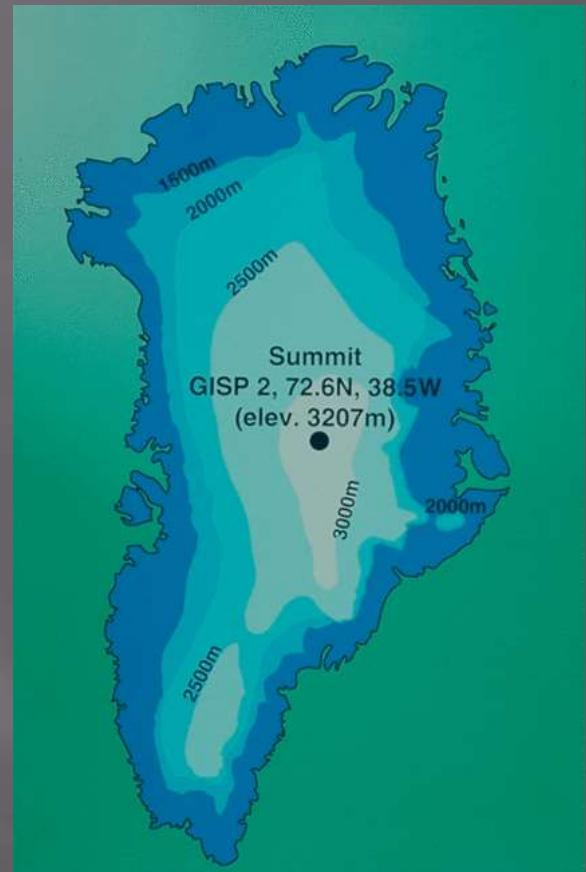
- Geochimica
- Carote di ghiaccio
- Speleotemi
- Gusci di foraminiferi

# Carote di ghiaccio



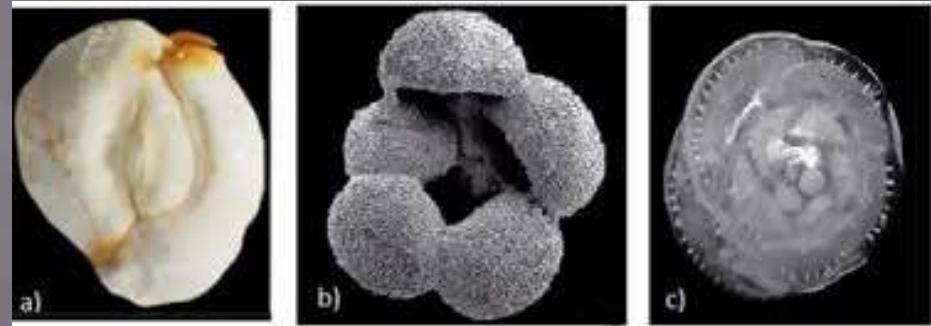
Kobashi et al. 2008

Ricostruzione della Temperatura degli ultimi 4000 anni tramite lo studio di  $\delta^{18}\text{O}$



Mappa altimetrica della Groenlandia con posizione di carotaggio del ghiaccio GISP2

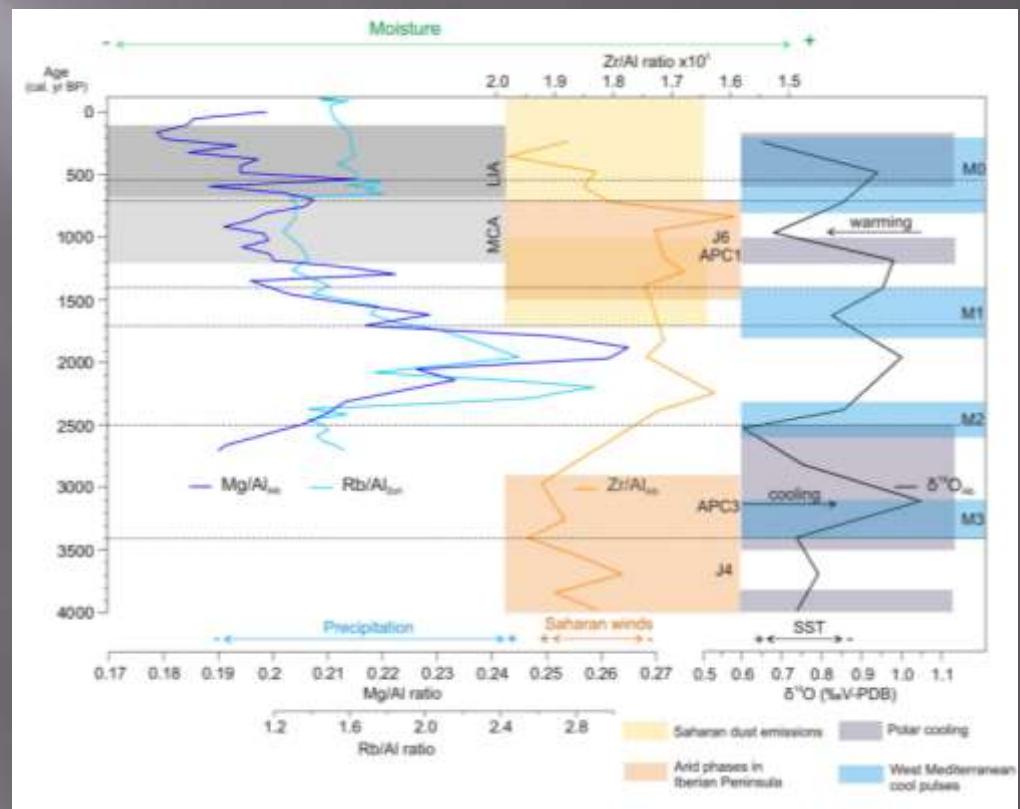
# Guscio di foraminiferi planctonici



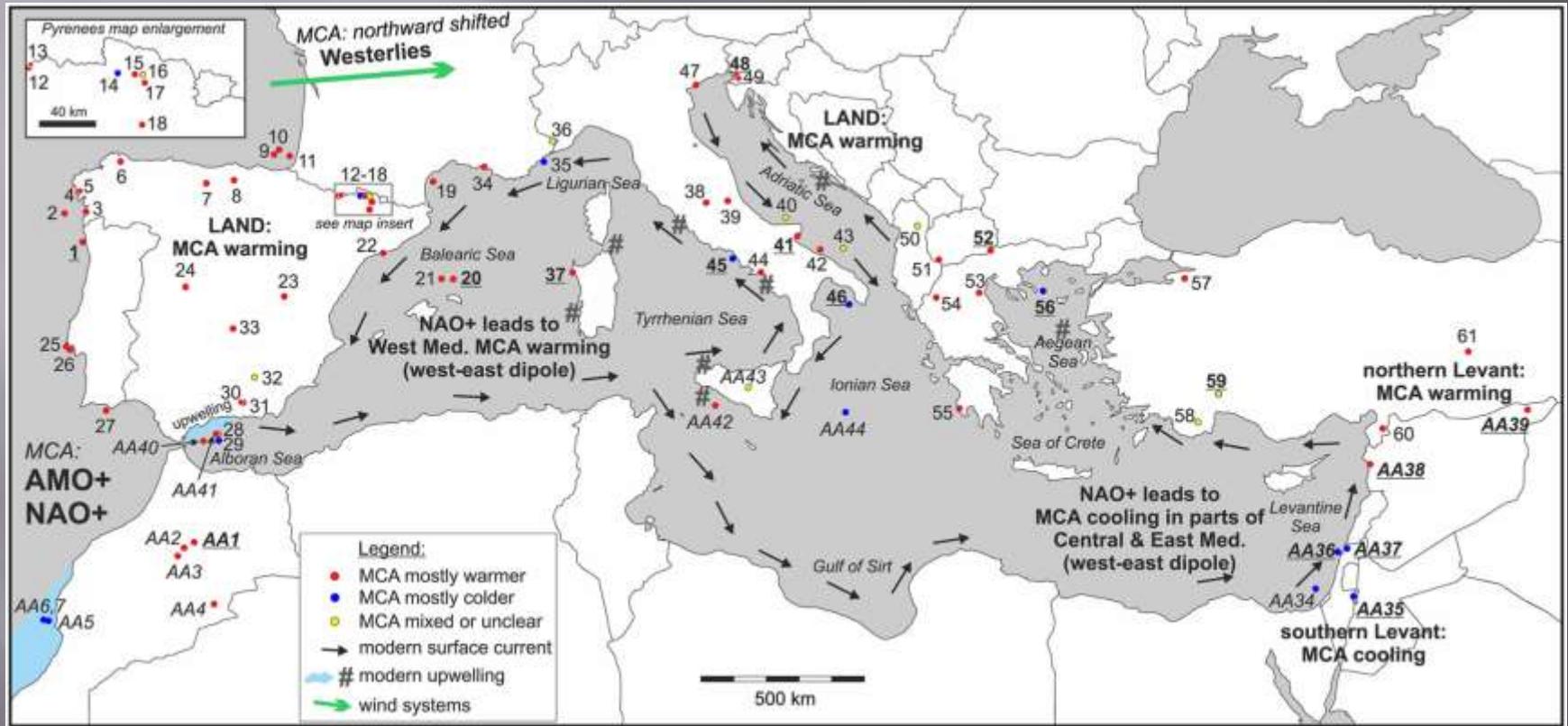
Esempio di Foraminiferi a guscio calcareo.

↓  
 $\text{CaCO}_3$

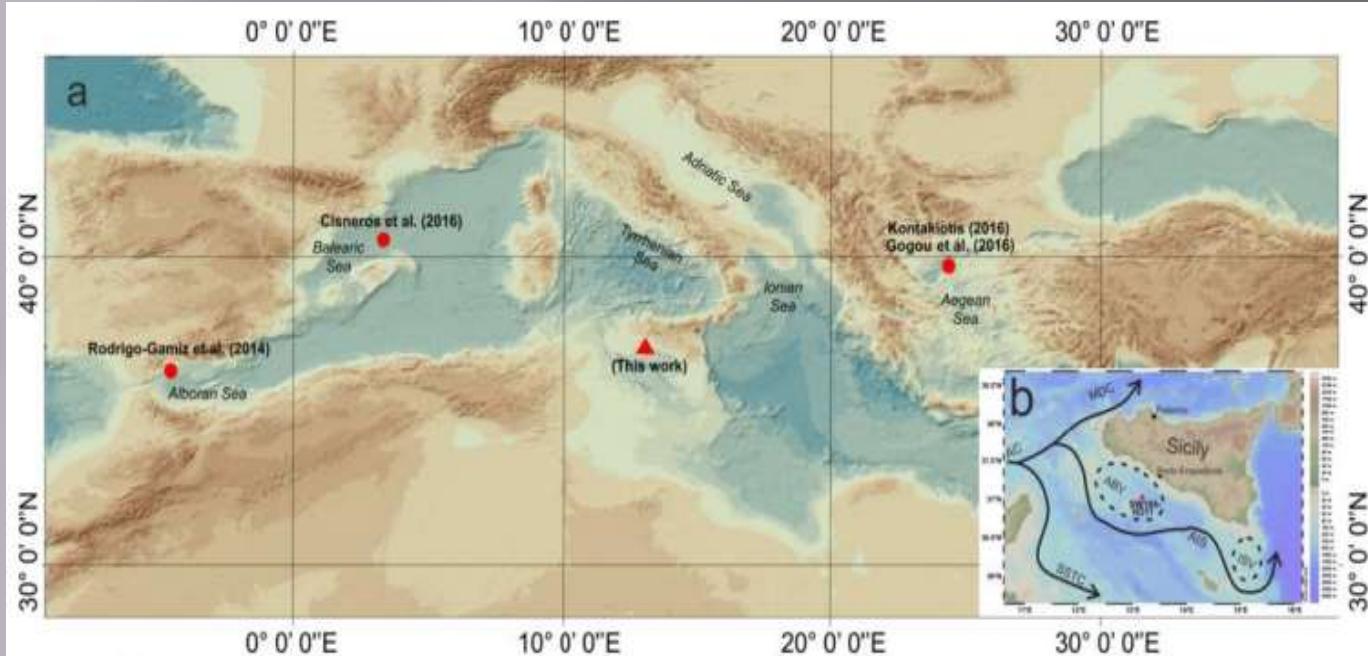
↓  
 $\delta^{18}\text{O}$



Molte informazioni e proxy del Periodo Caldo Minoico sono relative al Mediterraneo



Da Luning et al. (2019)

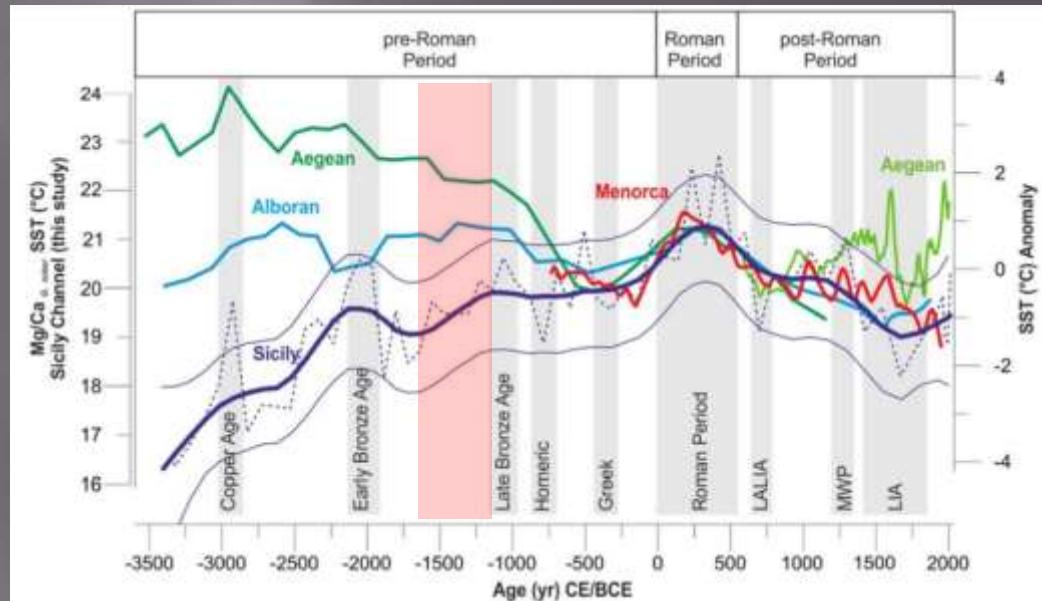


Core SW104ND11  
(Canale di Sicilia),  
NEXTDATA 2014

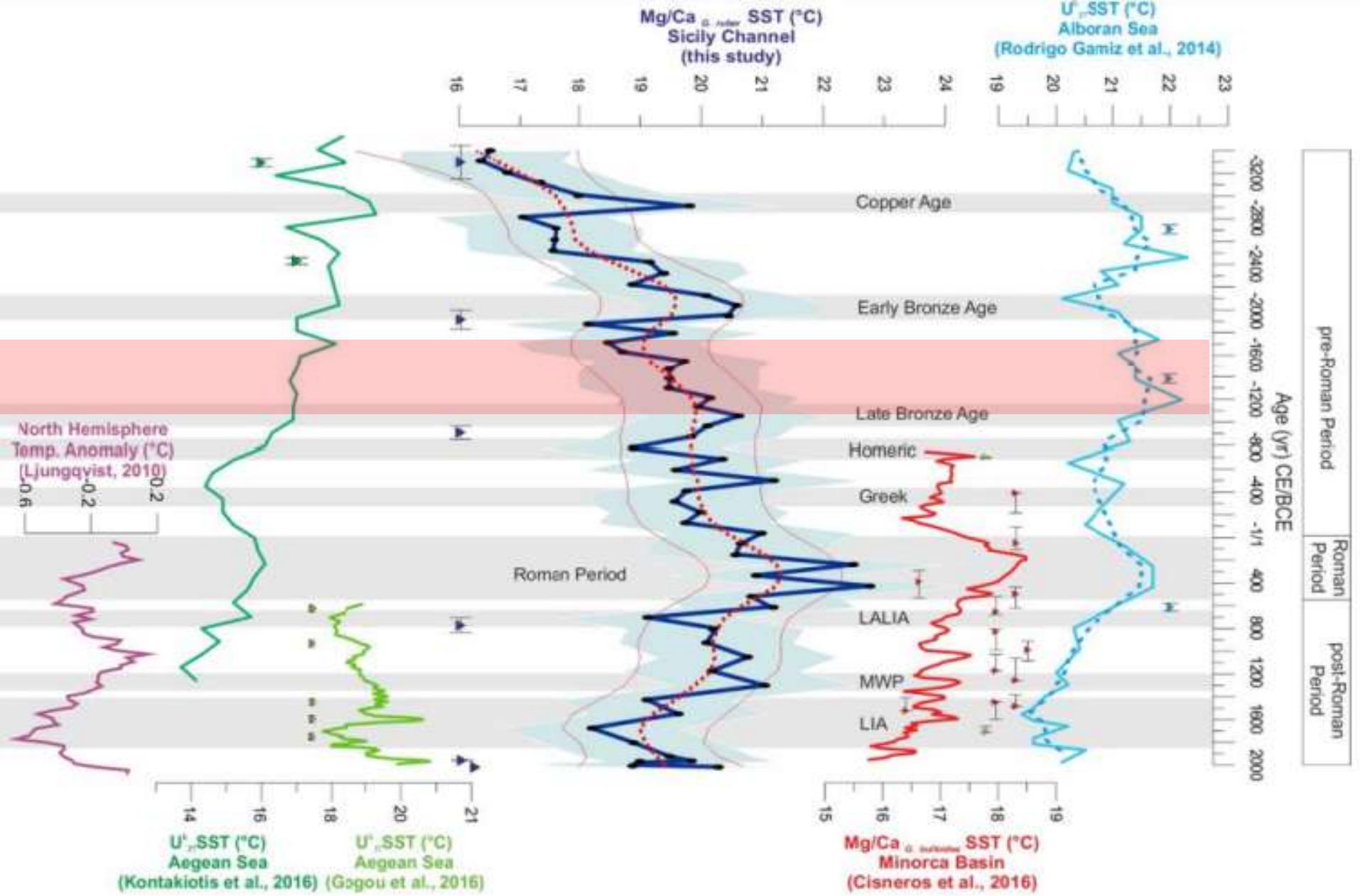
guscio di foraminiferi  
planctonici, alchenoni.



$\text{Mg}/\text{Ca}$

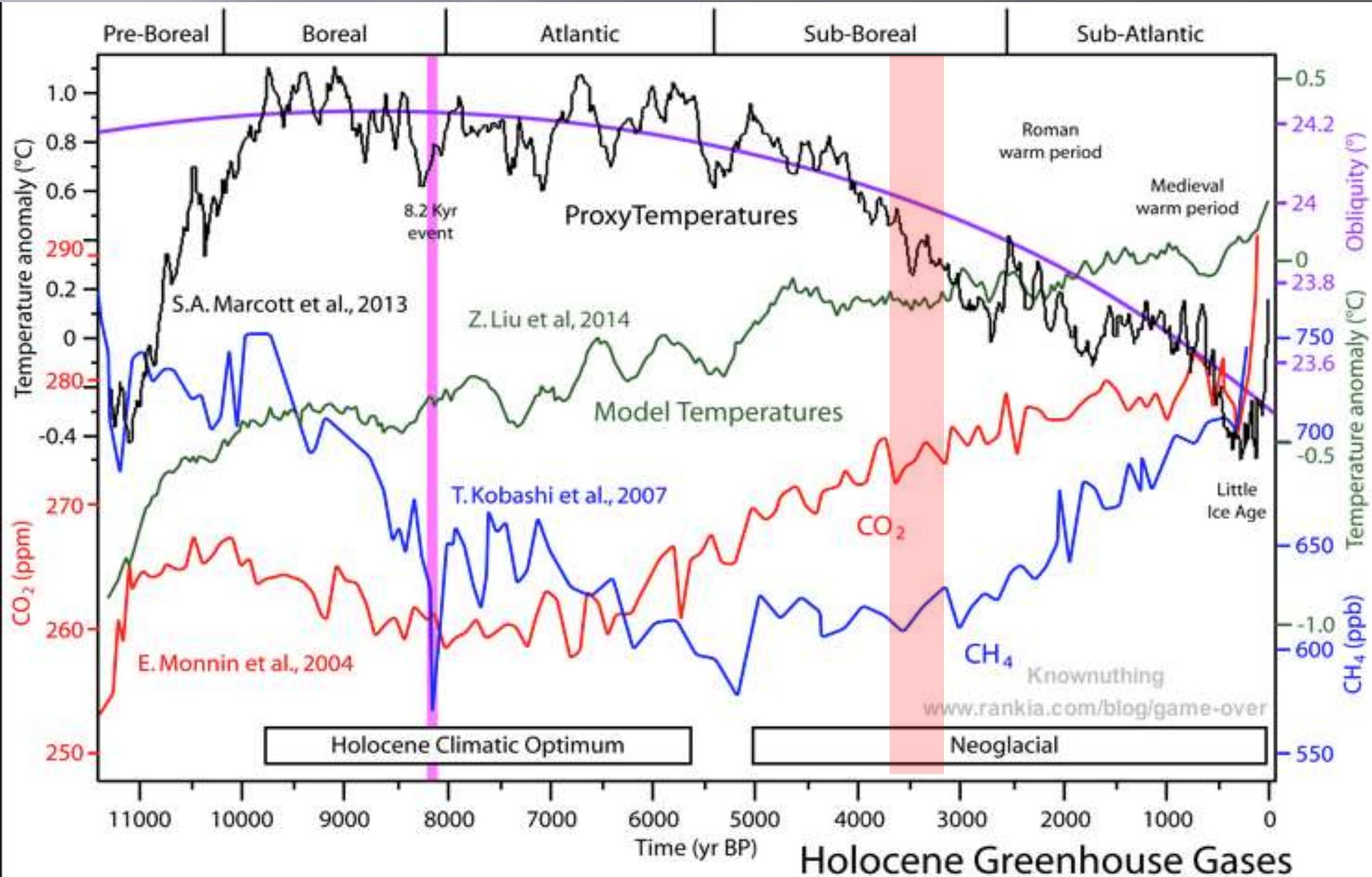


Margaritelli et al 2020, Nature.

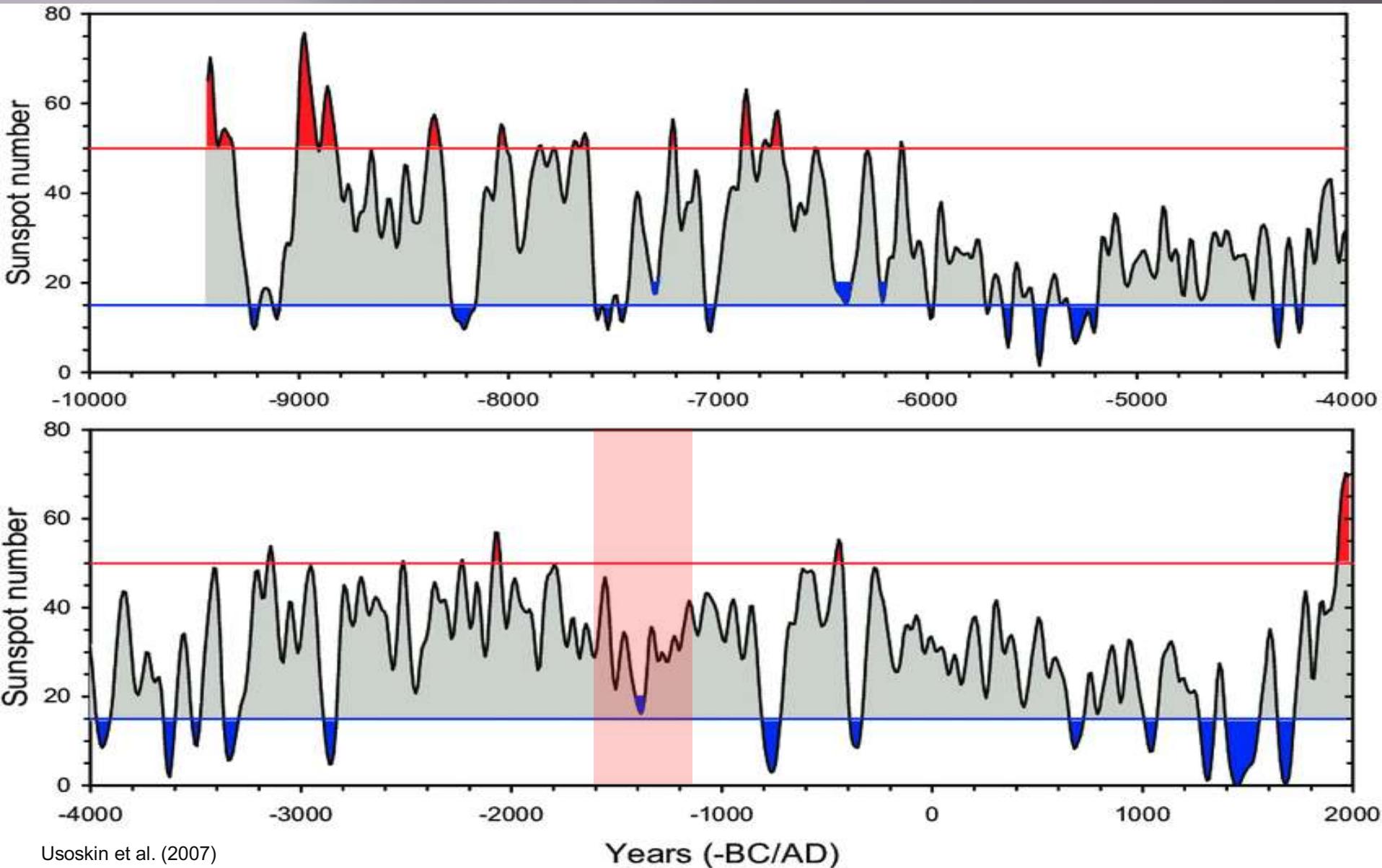


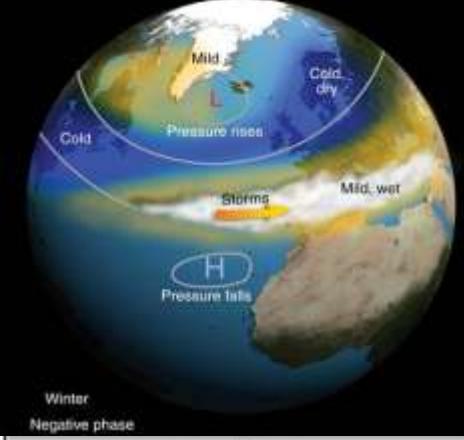
# CAUSE DEL PERIODO CALDO MINOICO?

# Gas serra

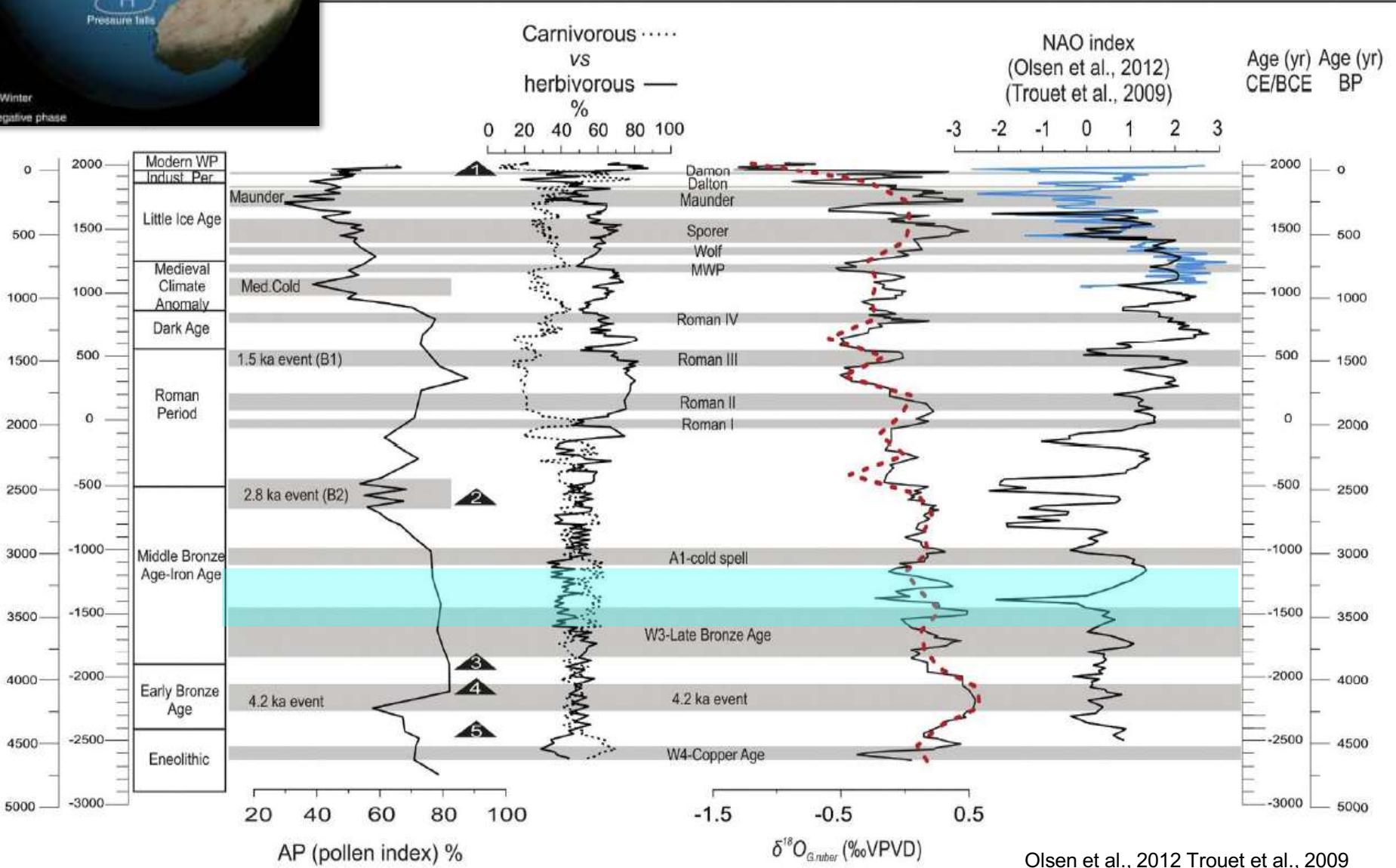


# Attività solare





# North Atlantic Oscillation (NAO)



# Conclusioni

Il Periodo Caldo Minoico ha determinato perturbazioni climatiche sensibili che hanno condizionato su scala regionale ( Mediterraneo e Atlantico Settentrionale) lo sviluppo di molte civiltà, fra cui la Minoica

# Bibliografia

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A detailed satellite map of Europe and the surrounding regions. The map shows the continent's green landmasses, the deep blue of the Mediterranean Sea, and the dark blue of the Atlantic Ocean. Major cities and coastlines are visible. The text "GRAZIE PER L'ATTENZIONE" is overlaid on the map.

GRAZIE PER L'ATTENZIONE