

Through the unique capacities  
to provide exact fundamental and globally significant  
of the composition, structure and processes



# *Para ver tierras..... cavar hondo:*

## *Aplicaciones del refrán aragonés a la historia de los Trópicos Americanos*

*Blas Valero Garcés (IPE-CSIC)*

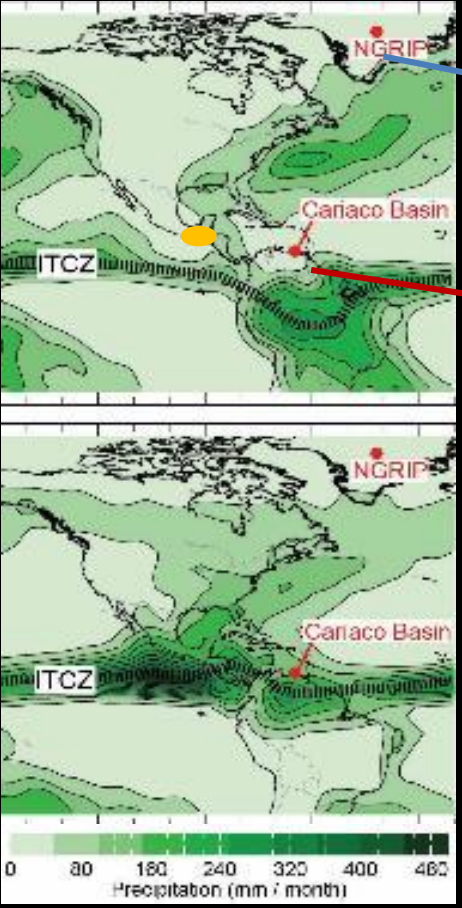
icdp |  
  
DRILLING PROGRAM



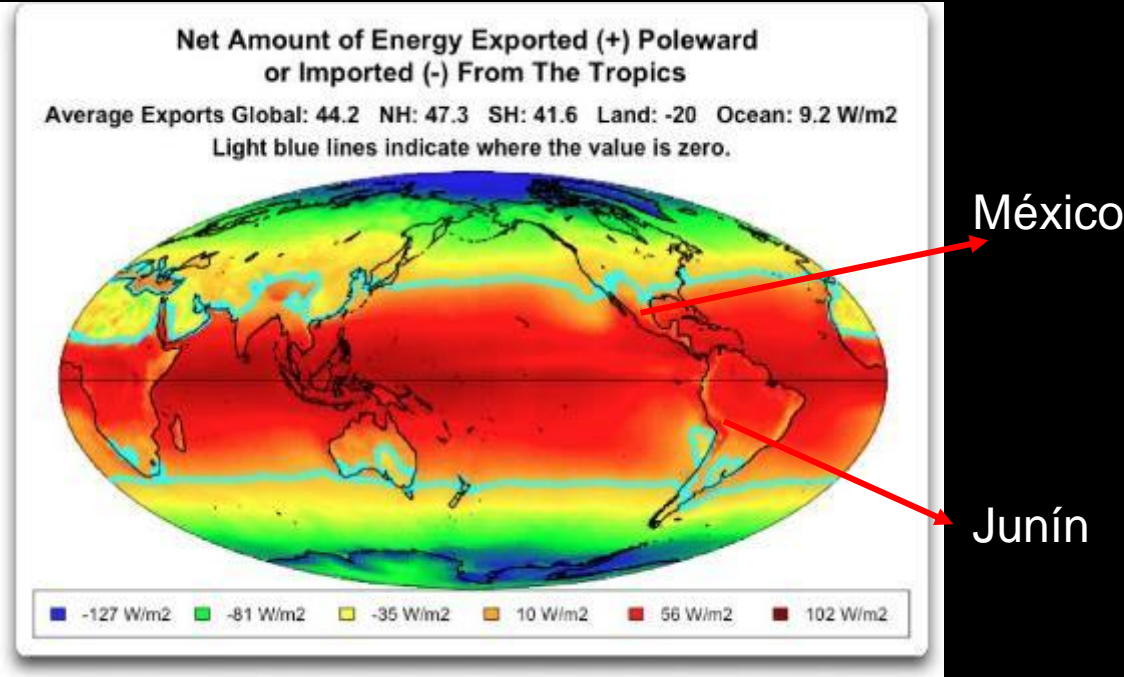
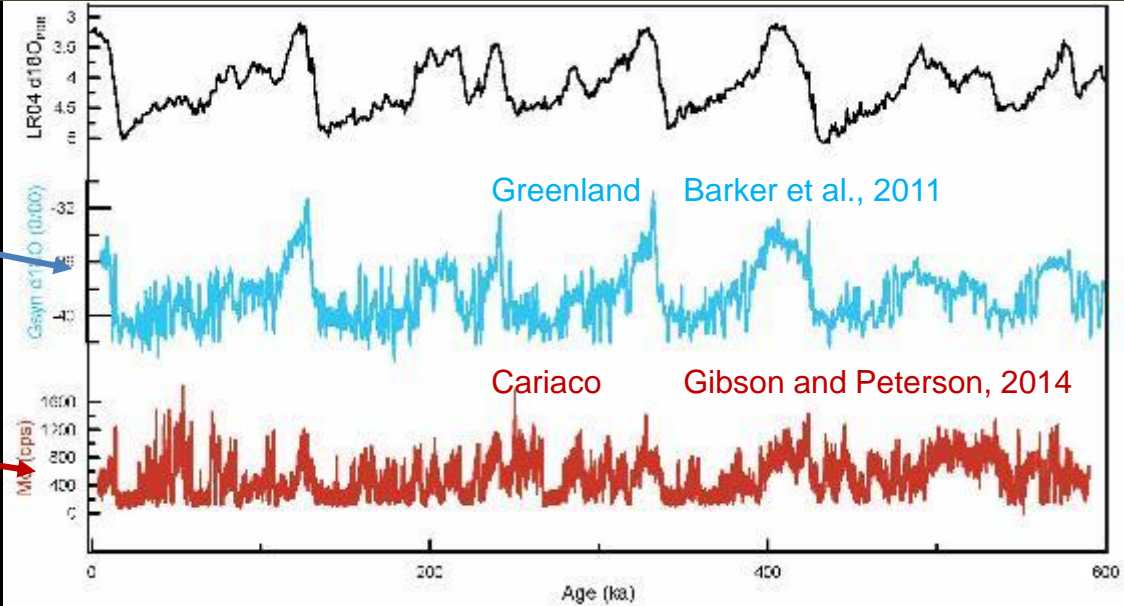
**IV JORNADAS IPErinas  
IPE-CSIC  
15 de diciembre de 2016**

- Cuenca de Chalco (México)
- Lago Junín (Perú)

# CLIMATE: Role of tropics in global paleo-teleconnections



Map from Deplazes 2012



México

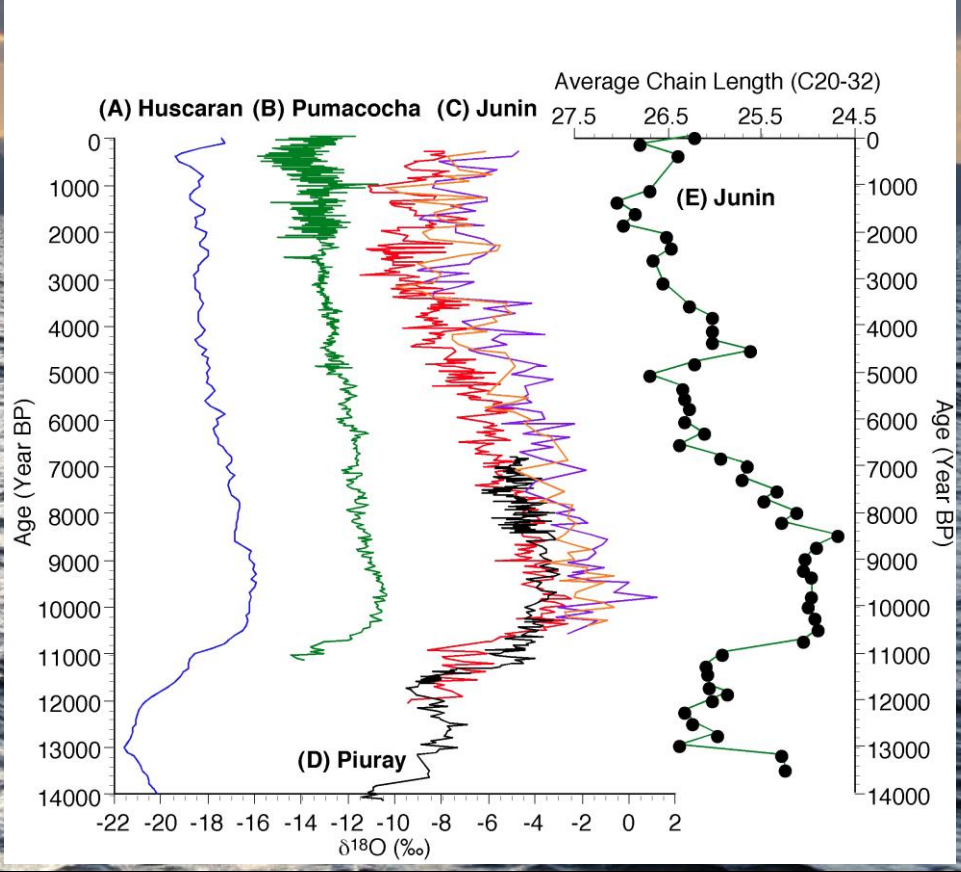
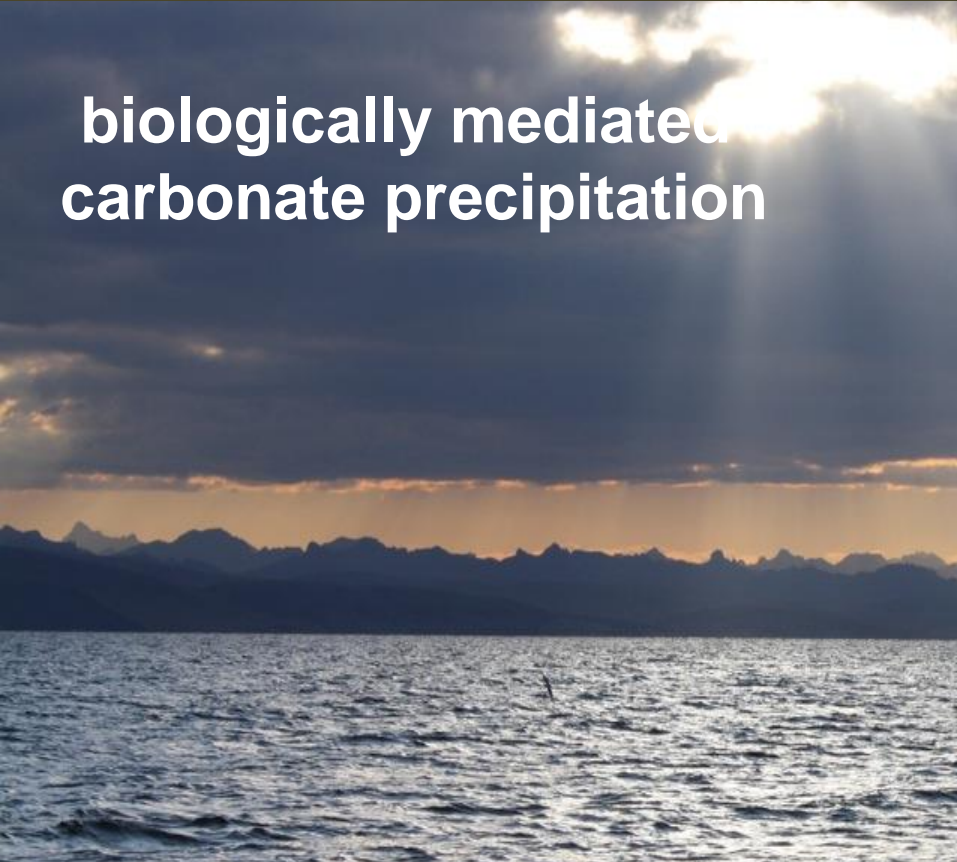
Junín

# Population: Megalopolis facing Global Change

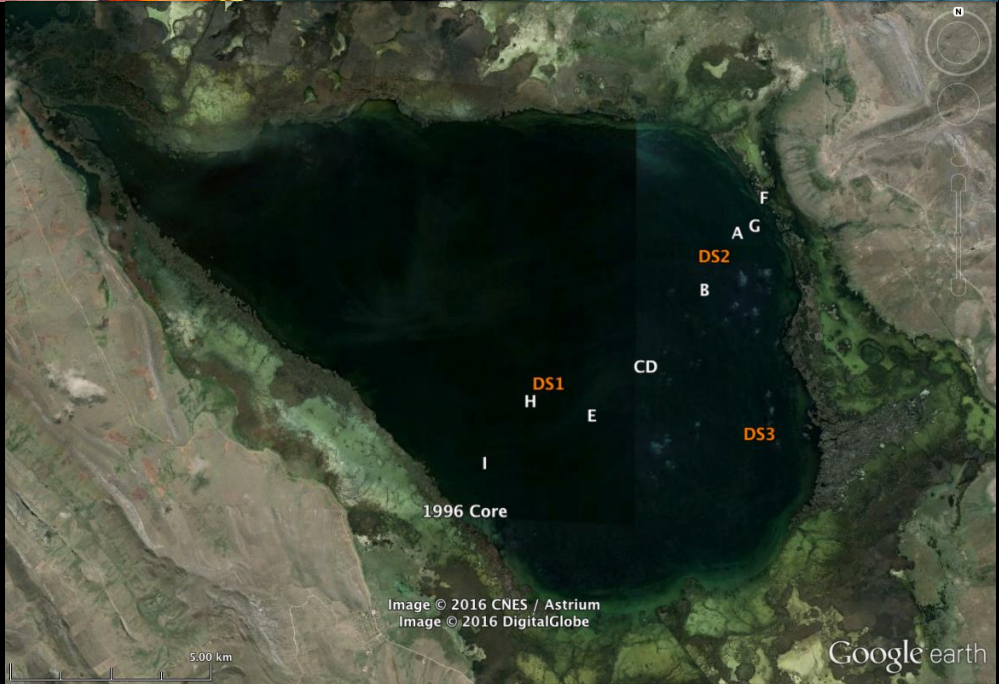


# Lake Junin (Perú)

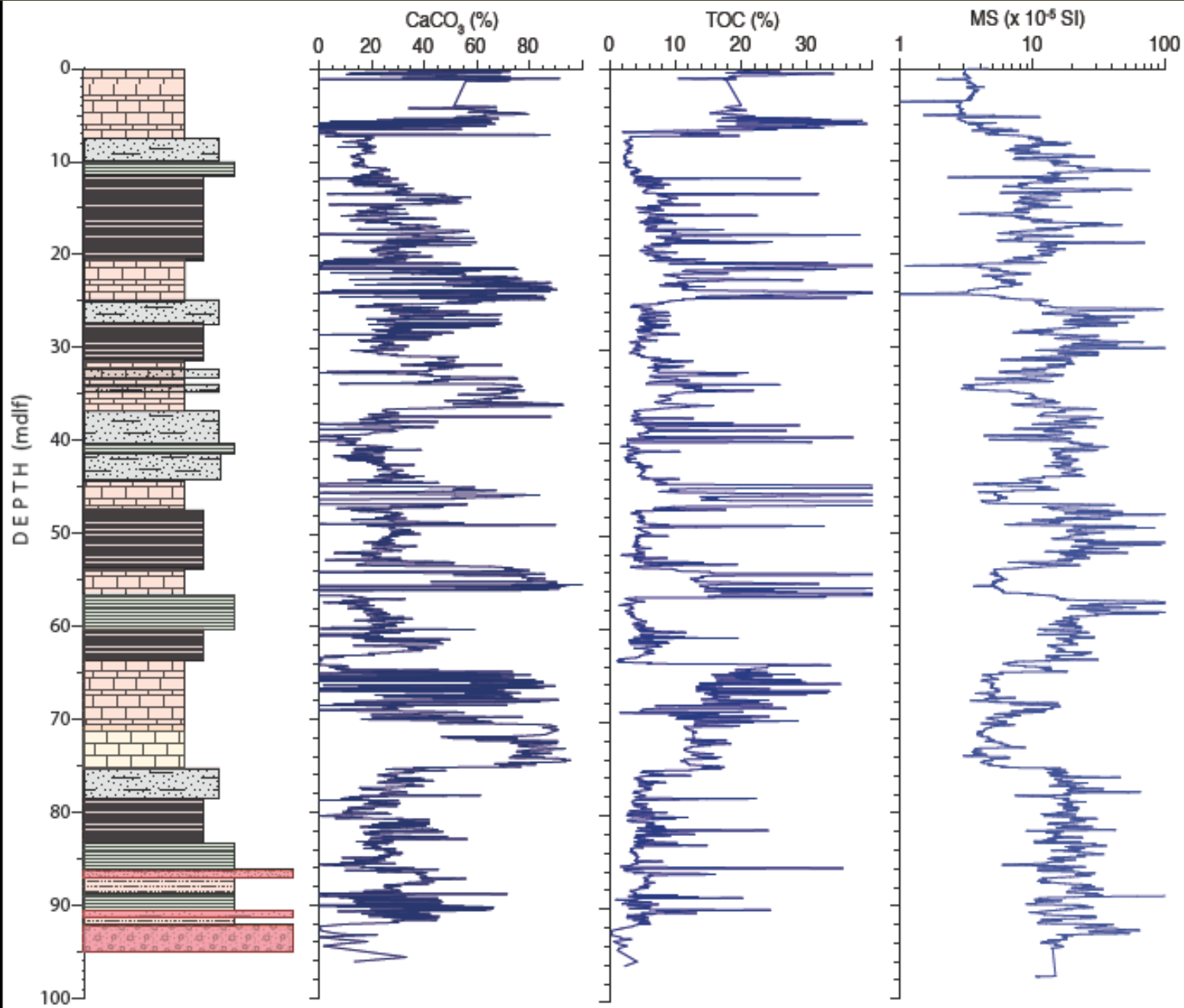
biologically mediated  
carbonate precipitation

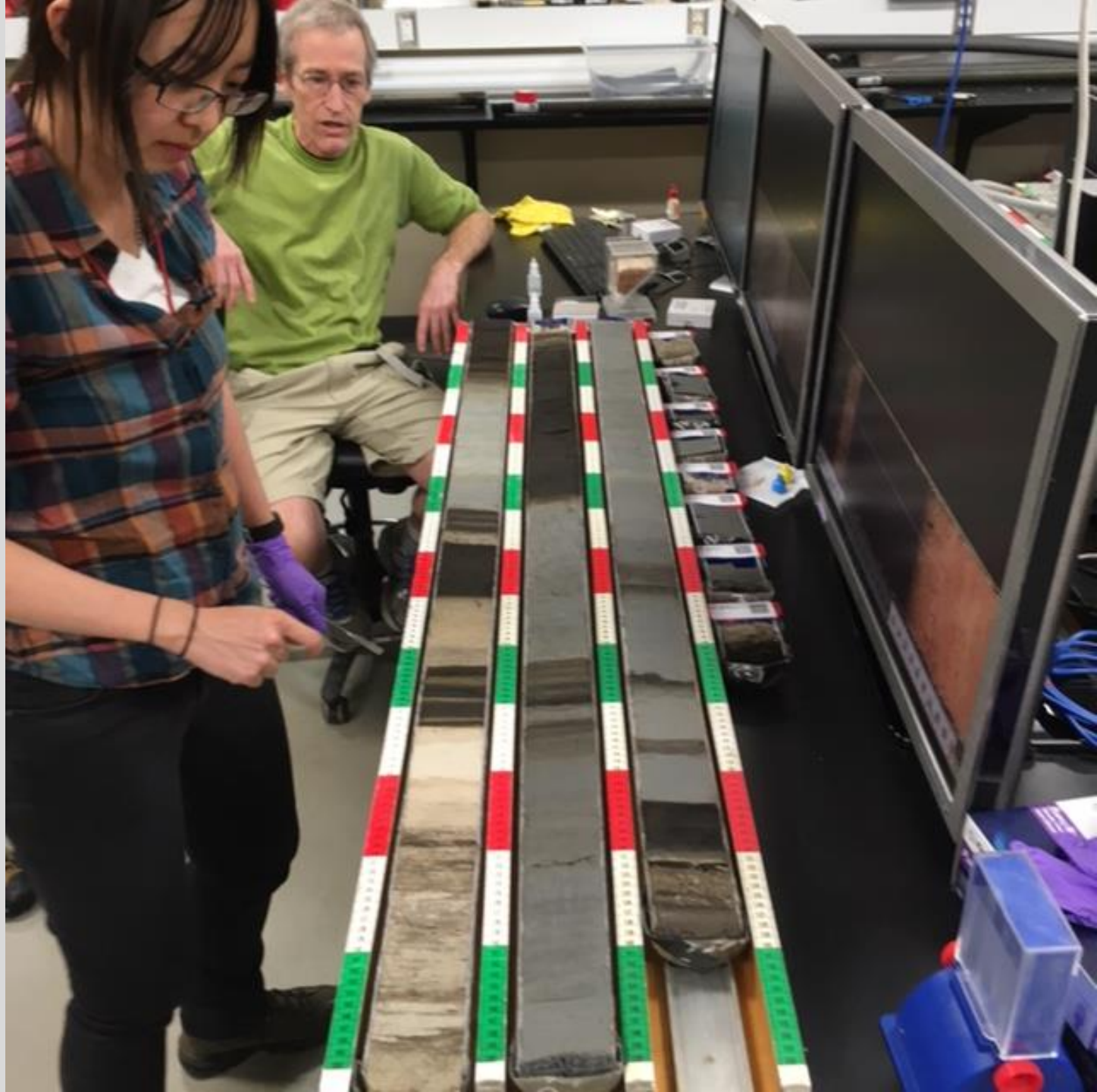


# Lake Junin Drilling Project: July – August 2016

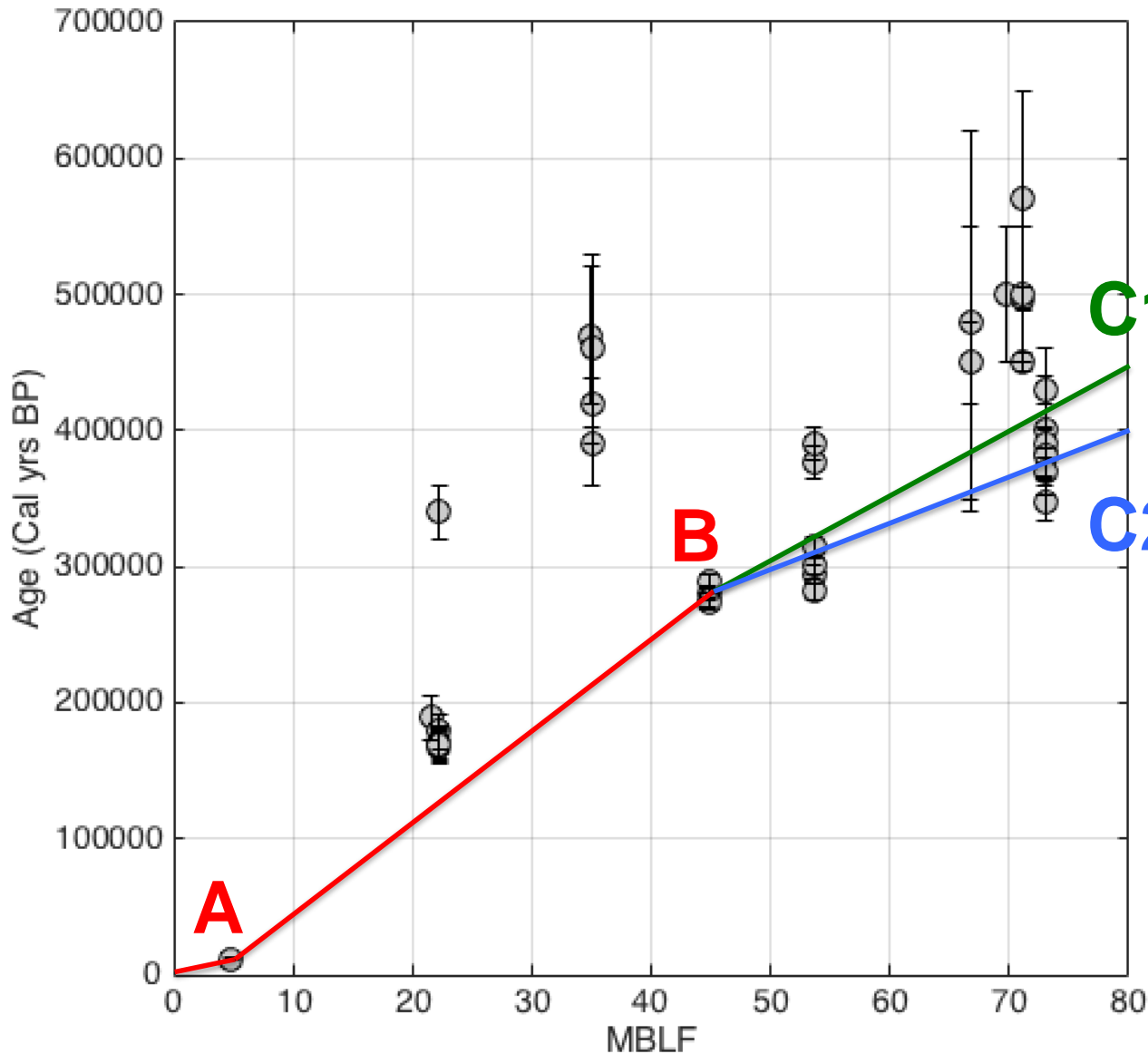


# Lake Junin Composite Stratigraphy





# A preliminary Age Model ( so far, so good...)



**A:** 12 kyr BP  
at 5 mblf

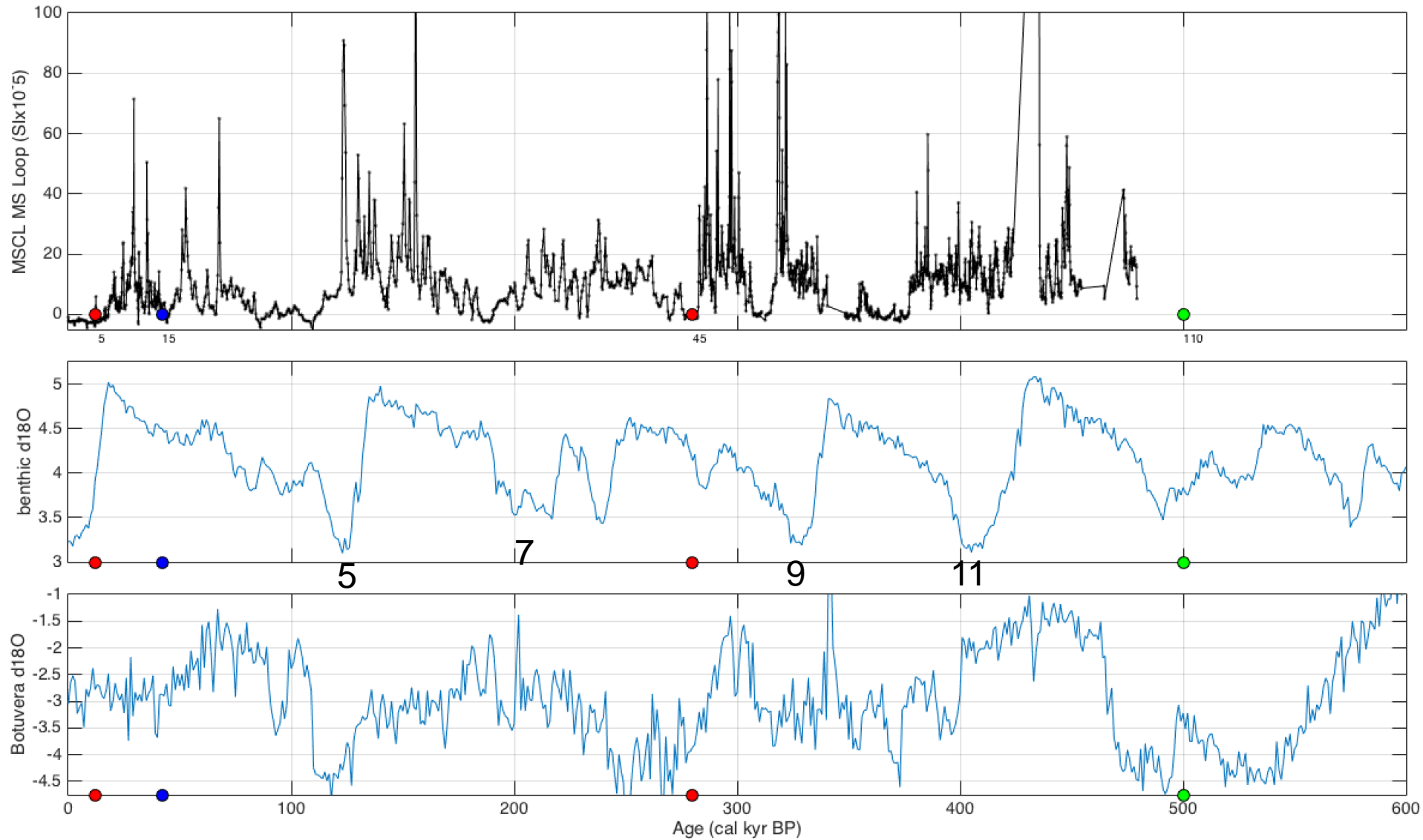
**B:** 280 kyr BP  
at 45 mblf

**C1:** 450 kyr BP  
at 80 mblf

**C2:** 400 kyr BP  
at 80 mblf



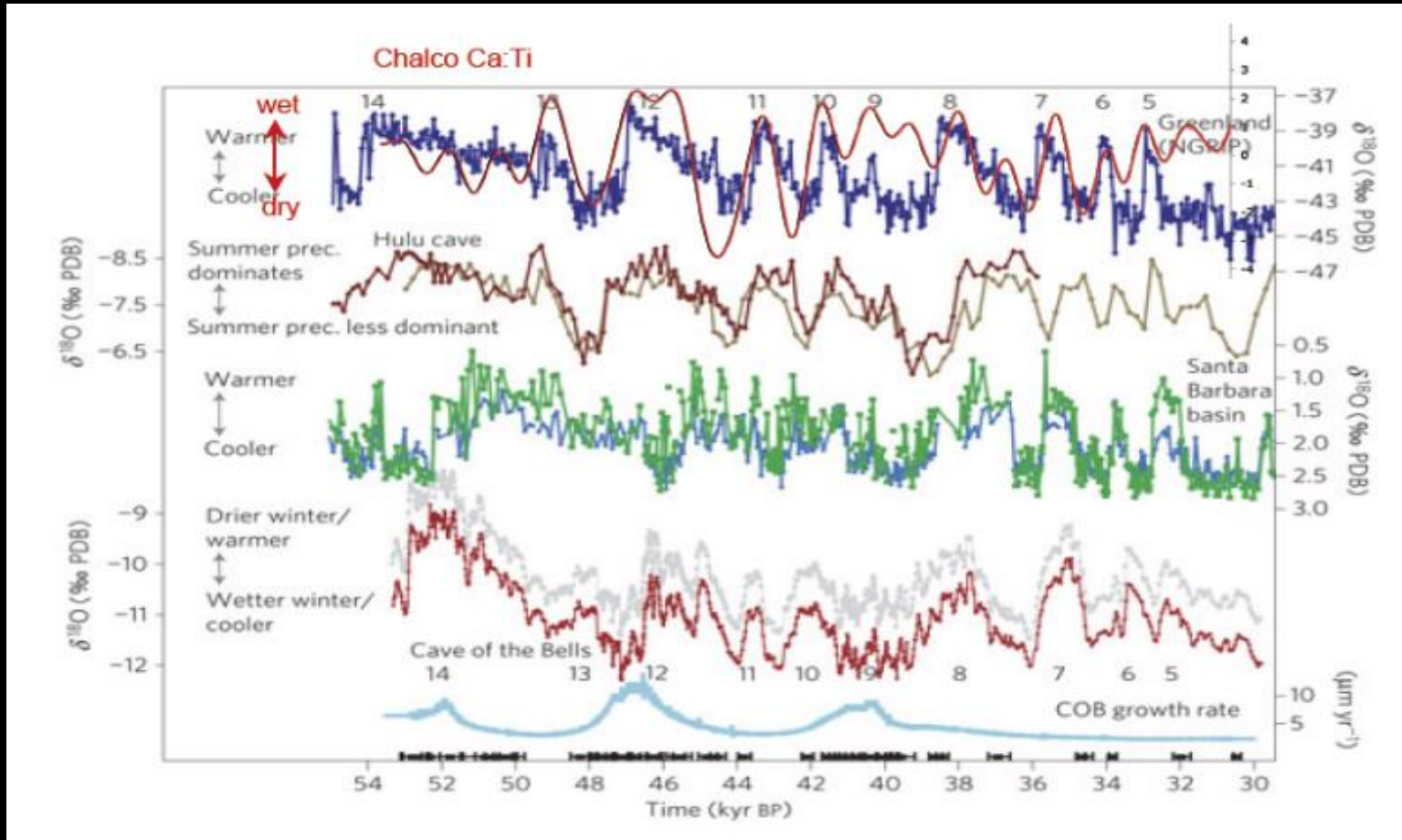
# Stage 11?





# Millennial scale variability

Chalco Ca:Ti data from 2008 cores. *adapted from Wagner et al, 2010*



Higher humidity during H-O interstadials;  
Northward migration ICTZ and stronger Mexican Monsoon



MEXIDRILL  
CHALCO

# Drilling operations (Feb-Mar 2016)



Mexican drilling company MAJOR  
Wireline diamond bit drilling

Image from Iván Montaña M.



24/7 six weeks

Images from Iván Montaña M.

↓  
¡ 400 mbs!

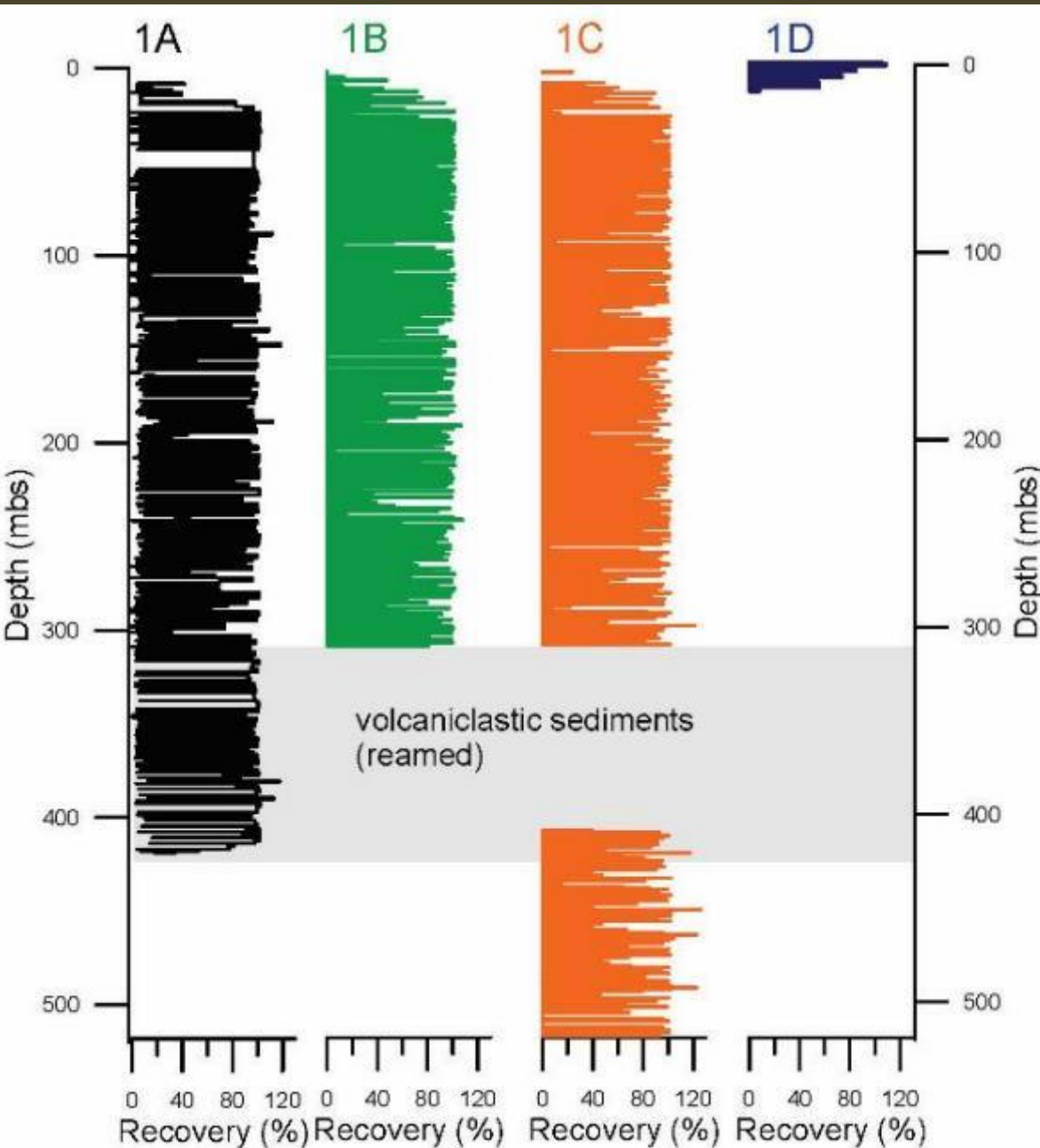
Viva Mexico

# Core Recovery

100 m coring in 12 hours  
– record in continental  
drilling



# Core Recovery



Uppermost soft sediment  
With Usinger corer (1D)

lacustrine mud  
alternating with  
discrete tephra layers

tephra, basalt, tephras

poorly-sorted alluvium



# Basal units below 300 m

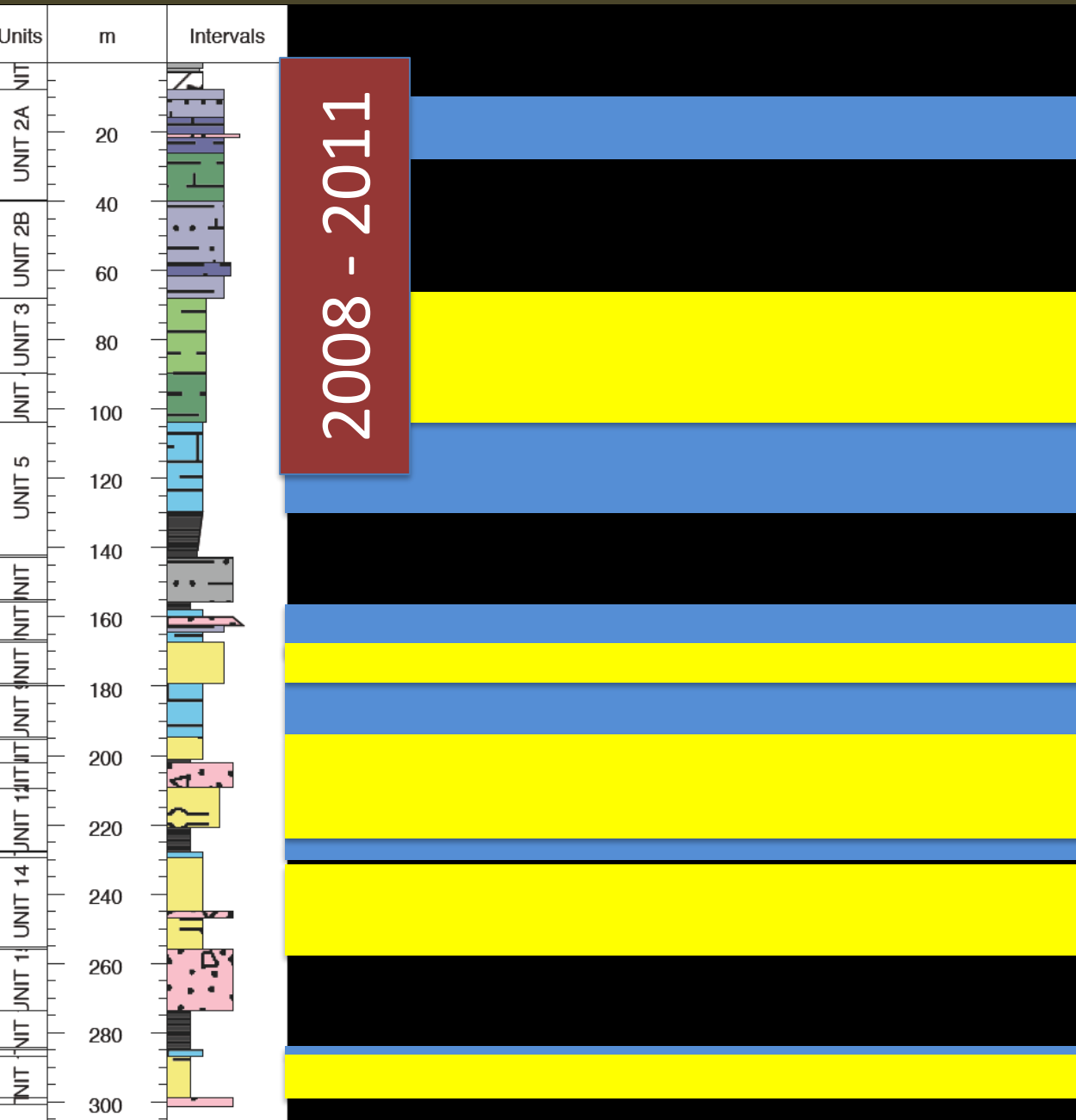


520.2 m below lake floor.....



The final core from Hole 1C. 520.2 m below surface: sandy, alluvial to near shore sediments with alteration by hydrothermal circulation

# Preliminary Stratigraphy (upper 300 m)



2008 - 2011

Carbonate:  
Units 5, 7, 9, 13 and 17

Organic:  
Unit 16 and intervals in  
12, 10 and 5

Diatomaceous:  
Unit 18, 14, 10, 8 and 4

Volcanic: Thick Volcanic  
intervals

# Oportunidades/Retos proyectos ICDP



- Paleoecología: Long Term Sequences
- Varios ciclos glaciares
- “Otros” interglaciares
- Ciencia integrada
- Pluridisciplineraidad
- Cronología
- Financiación