

# Constraining the formation of the fault-bound Cianza Basin, NW Argentina using low-temperature thermochronology

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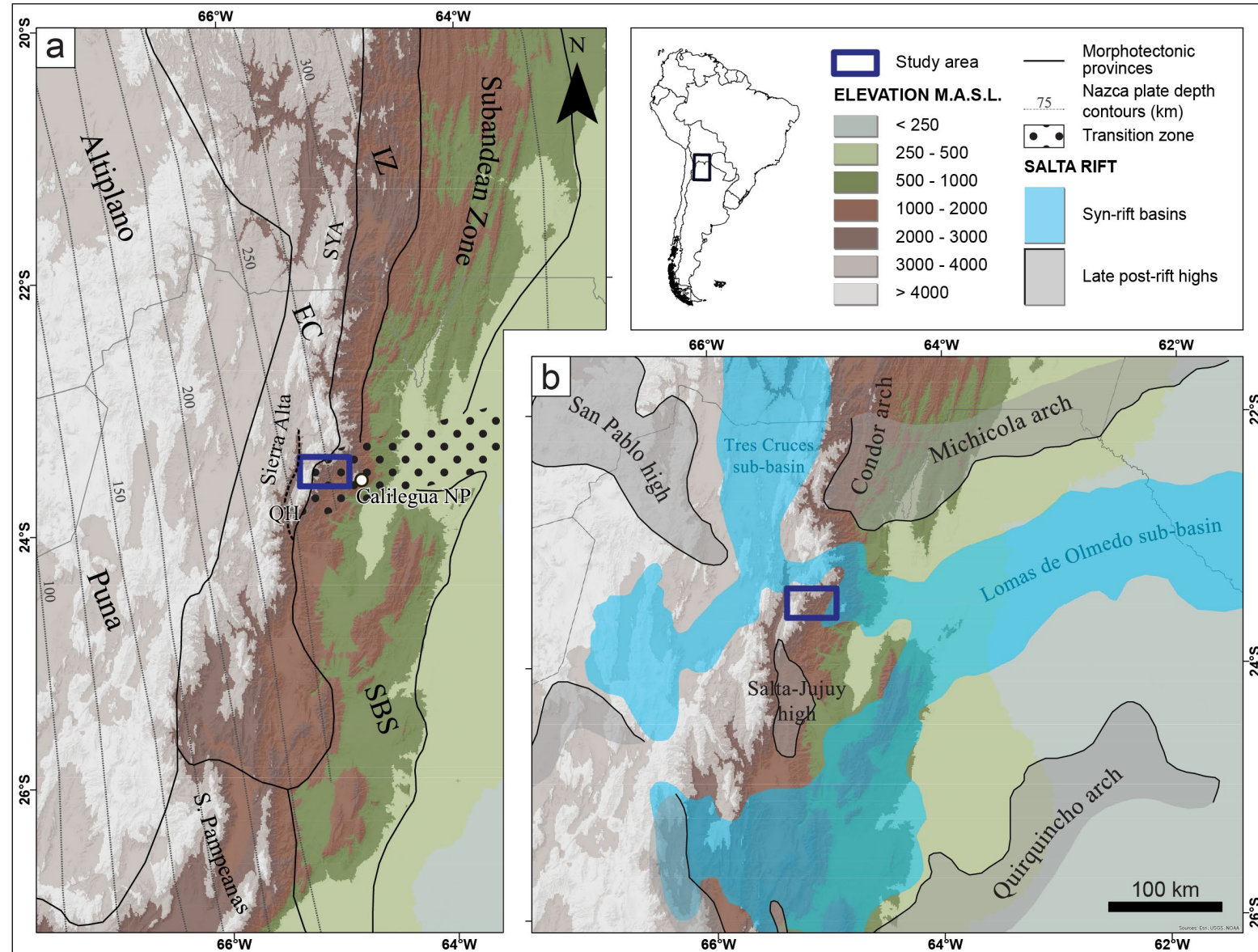




# INTRODUCTION

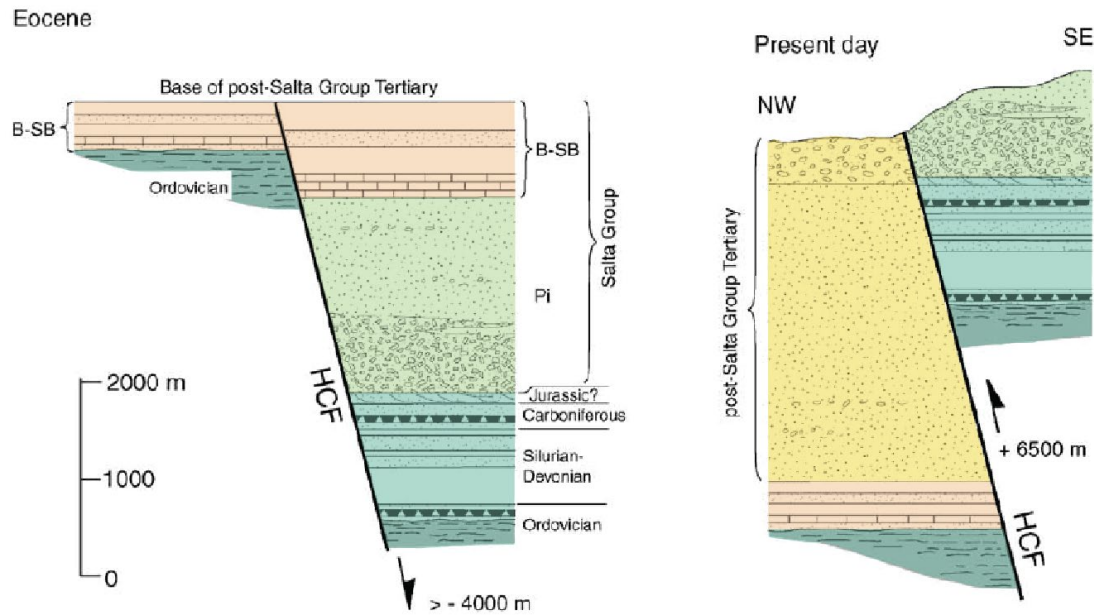
## STUDY AREA

- Eastern Cordillera
- Transition between Inter-/Subandean Zone and Santa Barbara System
- Western border of Lomas de Olmedo sub-basin
- Inversion of Cretaceous normal faults

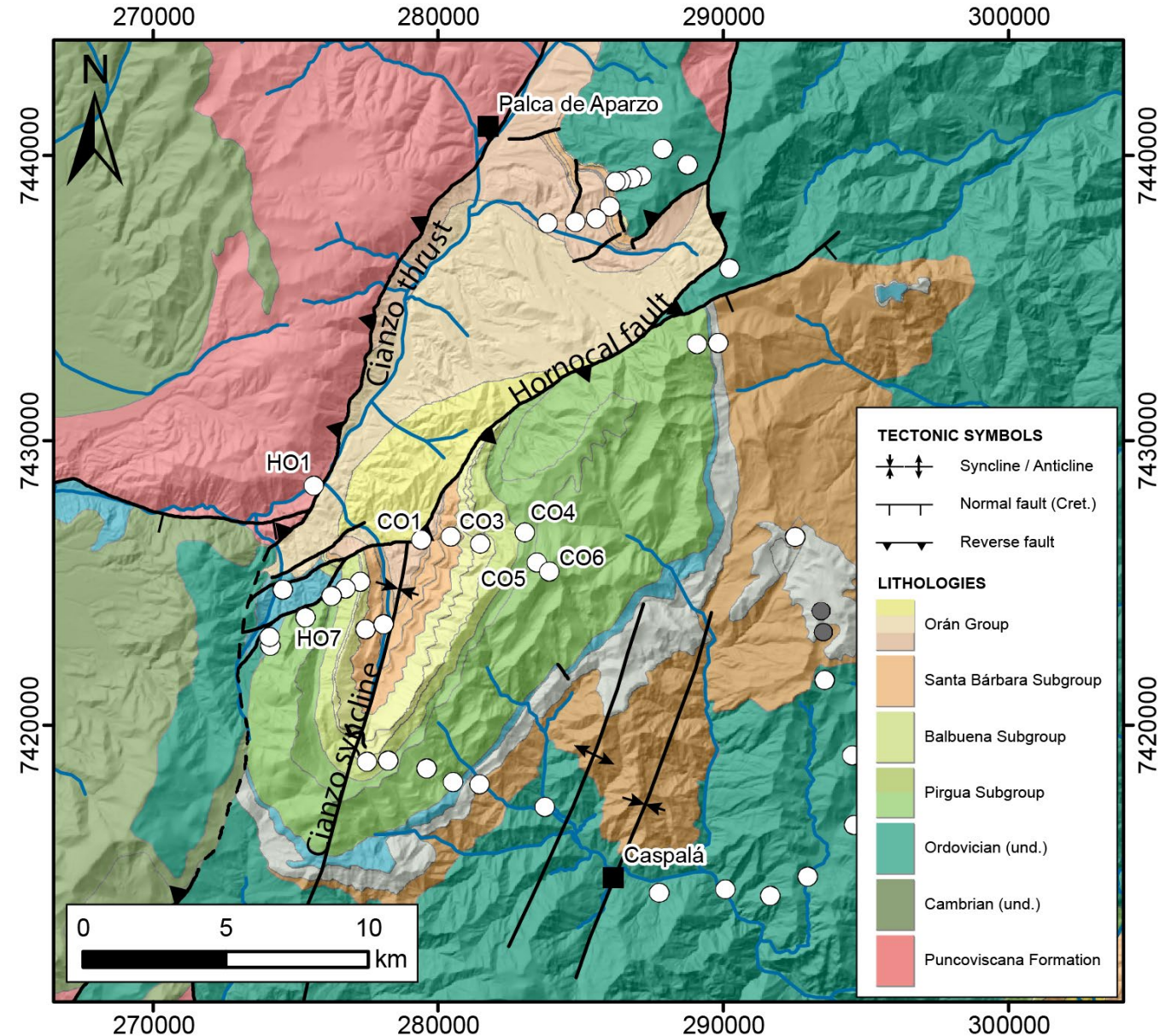




# CIANZO BASIN

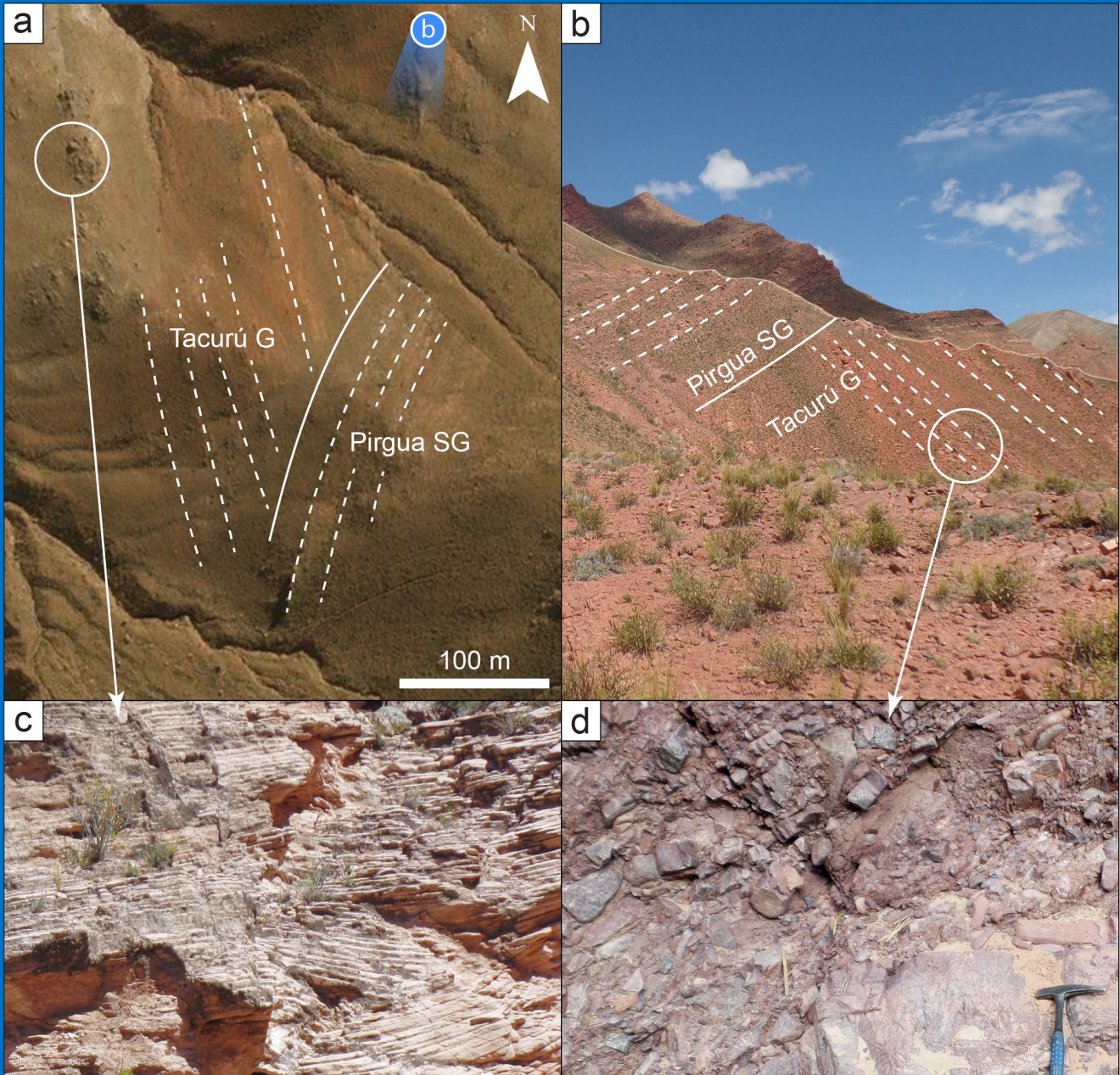
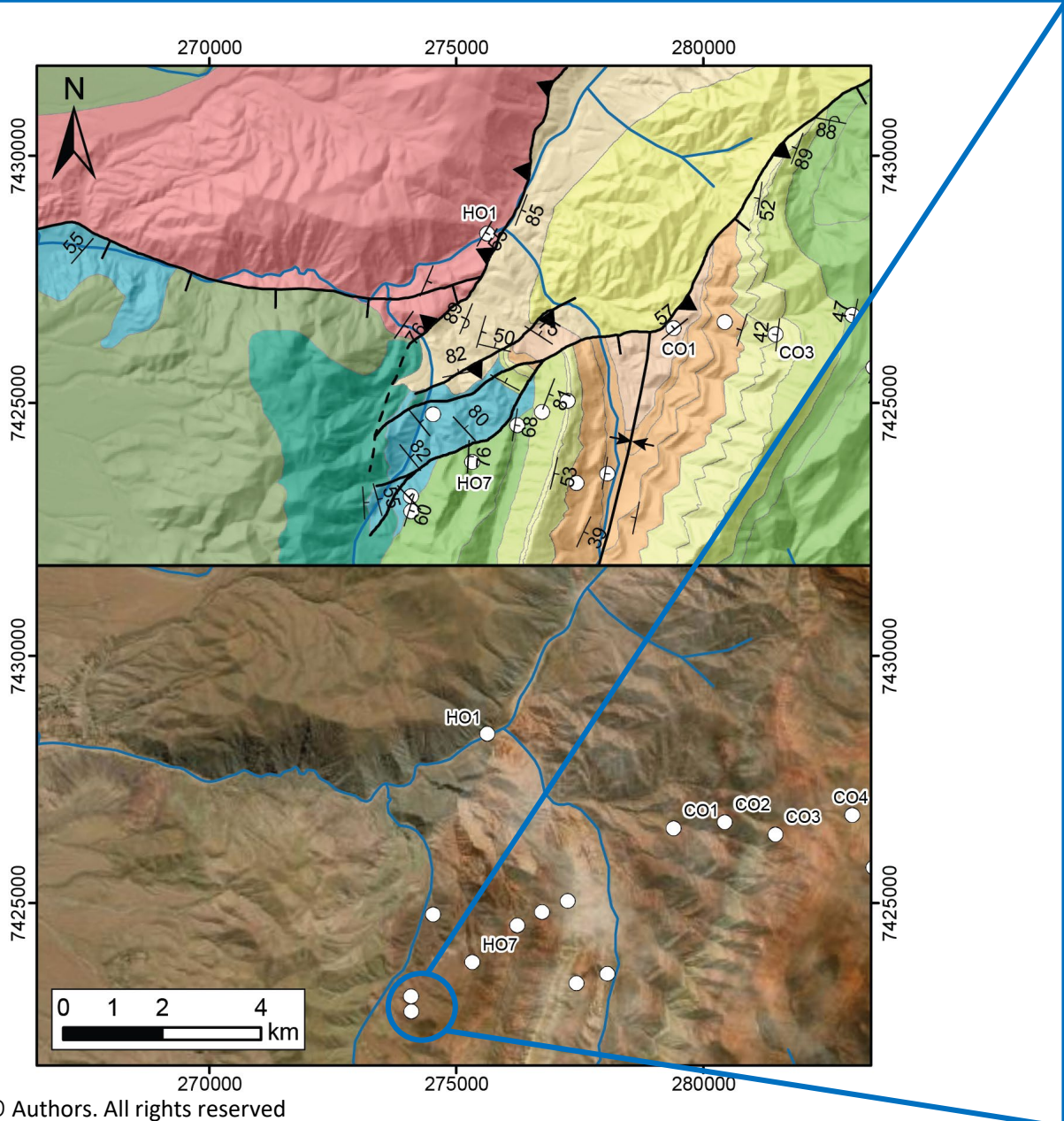


- Fault-bound (N-S, NE-SW)
- Inverted Hornocal fault
- Cianza syncline (hanging wall)
- 39 (U-Th-Sm)/He and/or apatite fission track samples



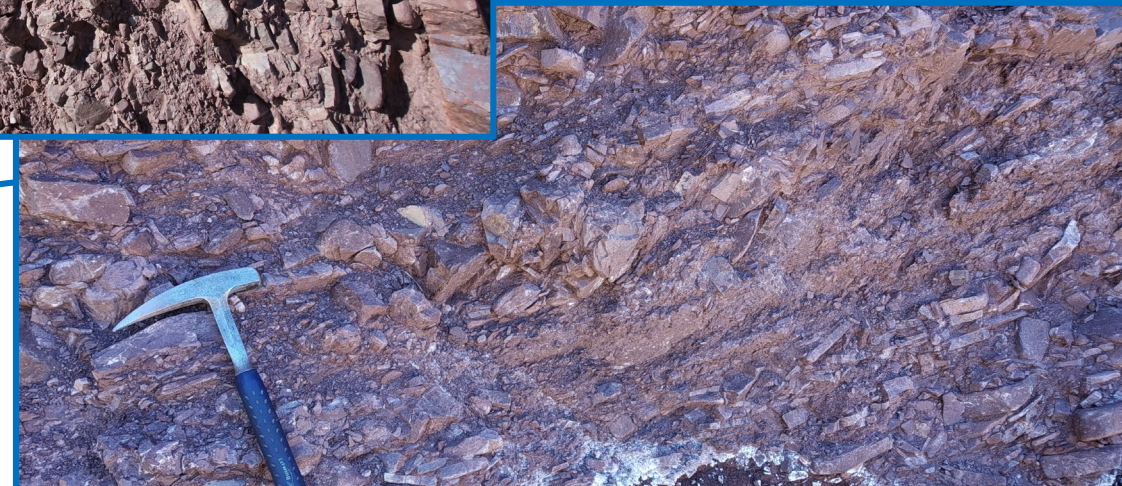
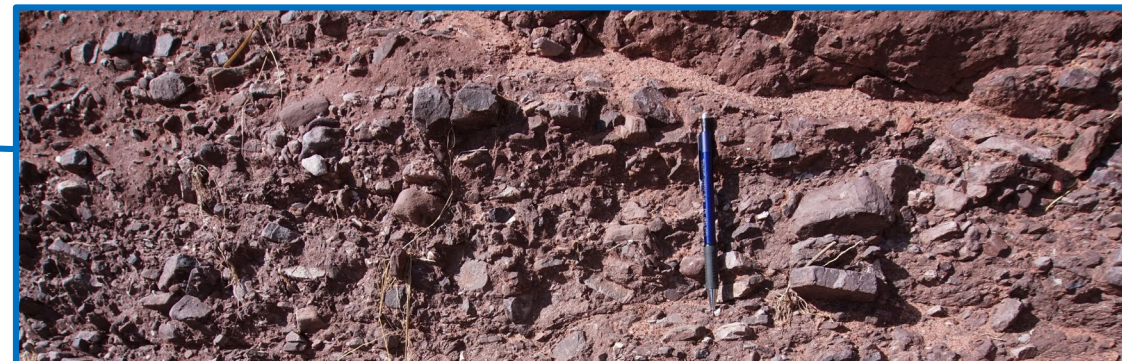
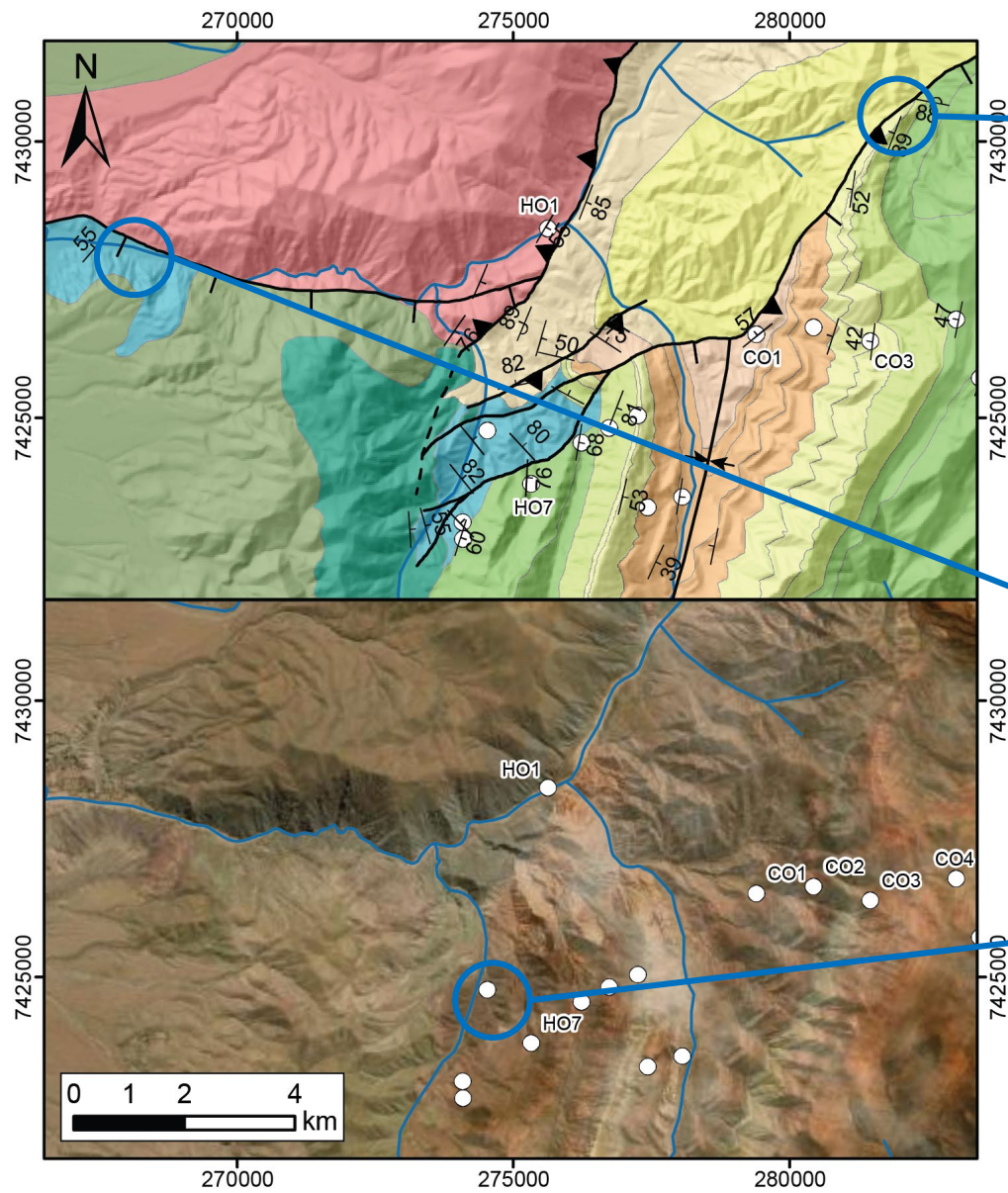


# MESOZOIC EXHUMATION



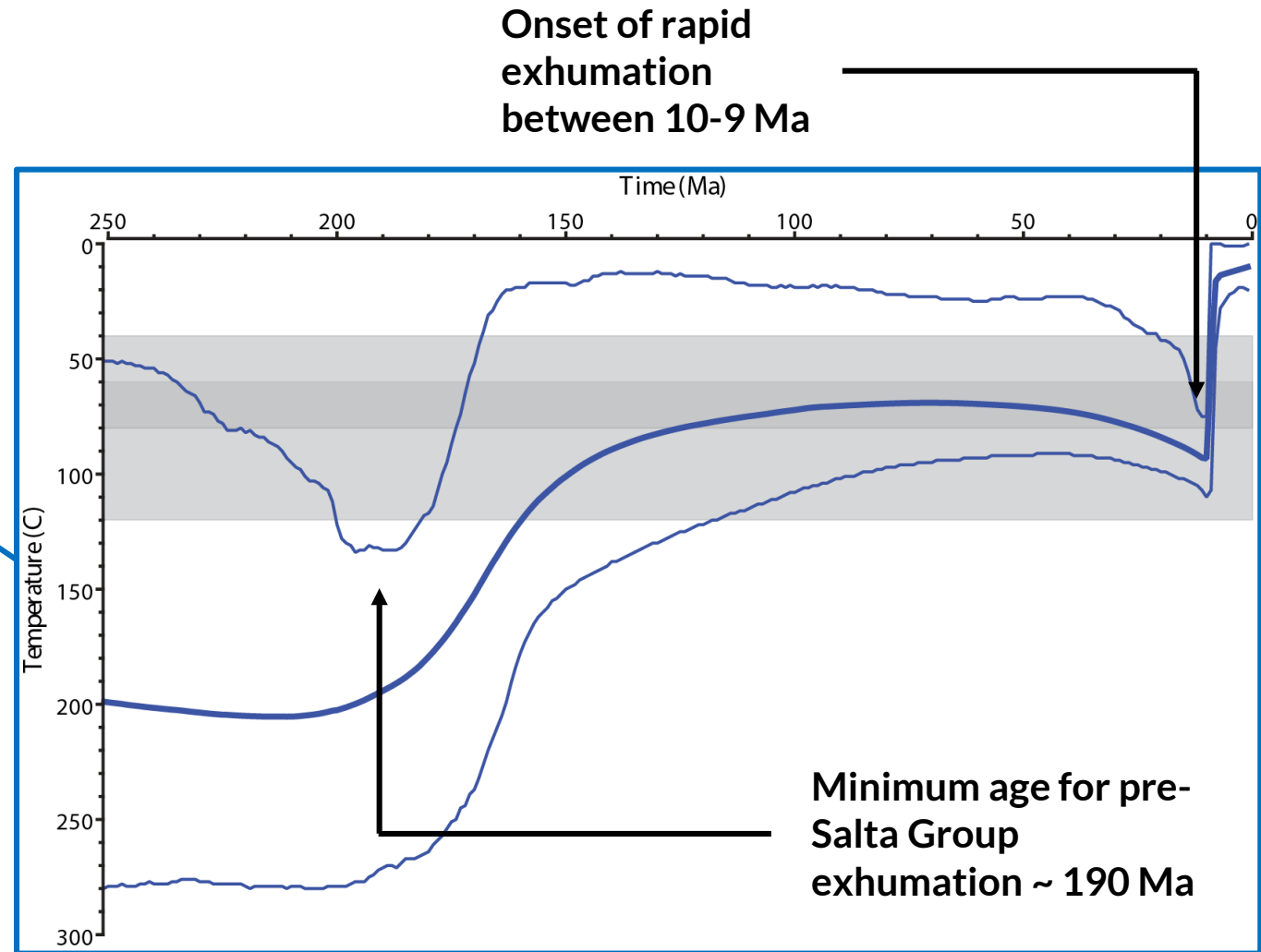
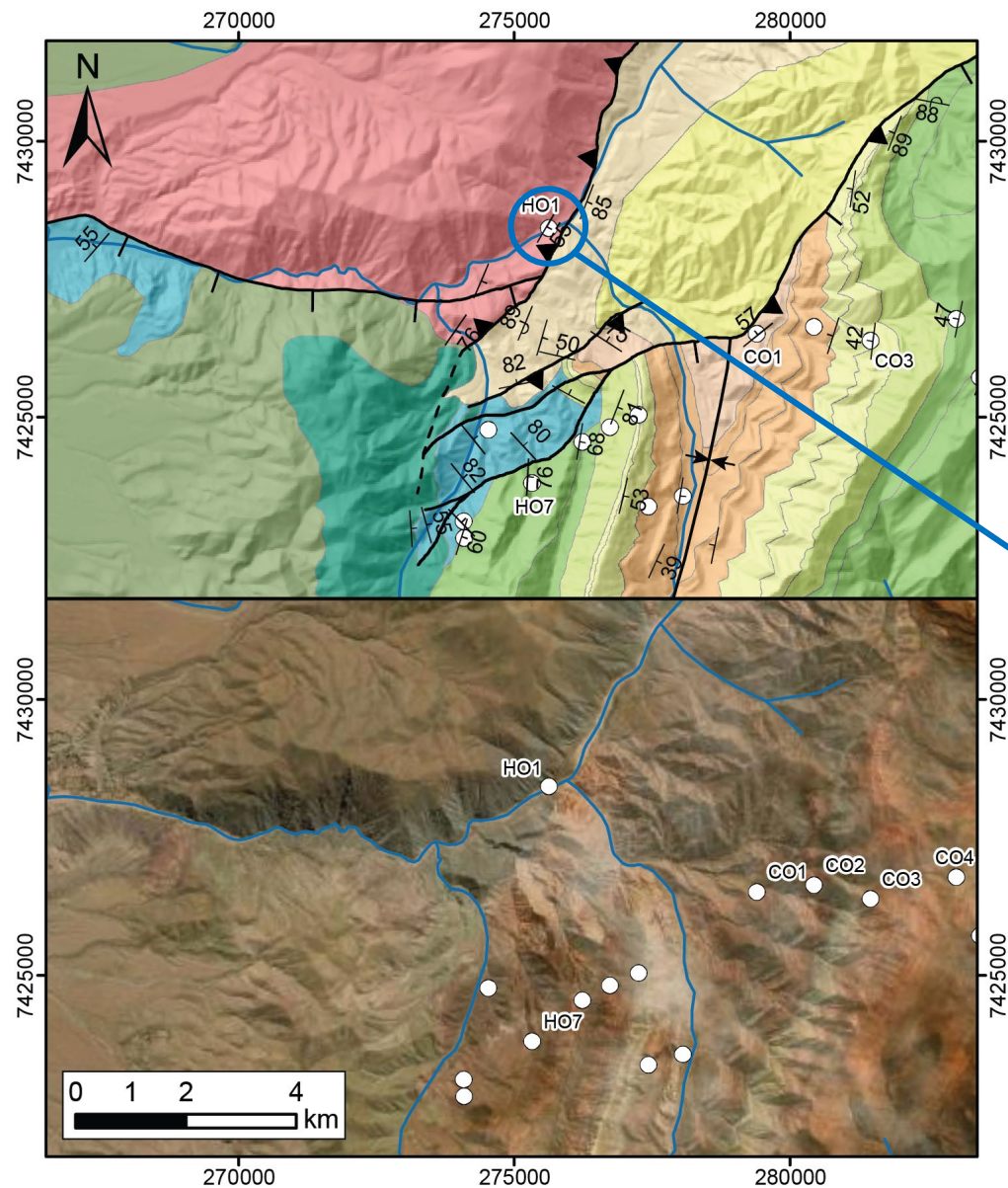


# MESOZOIC EXHUMATION

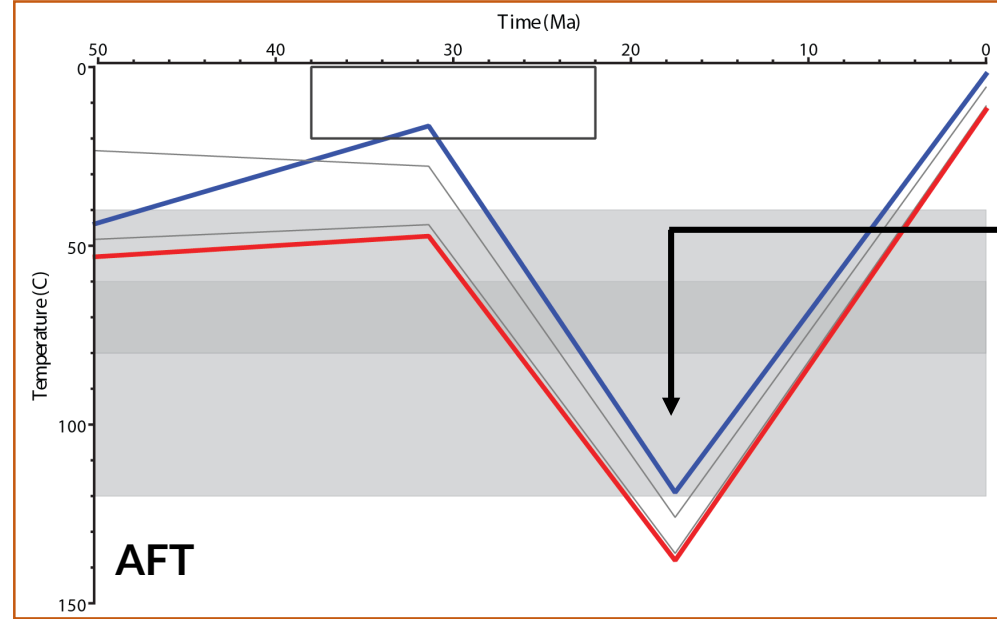
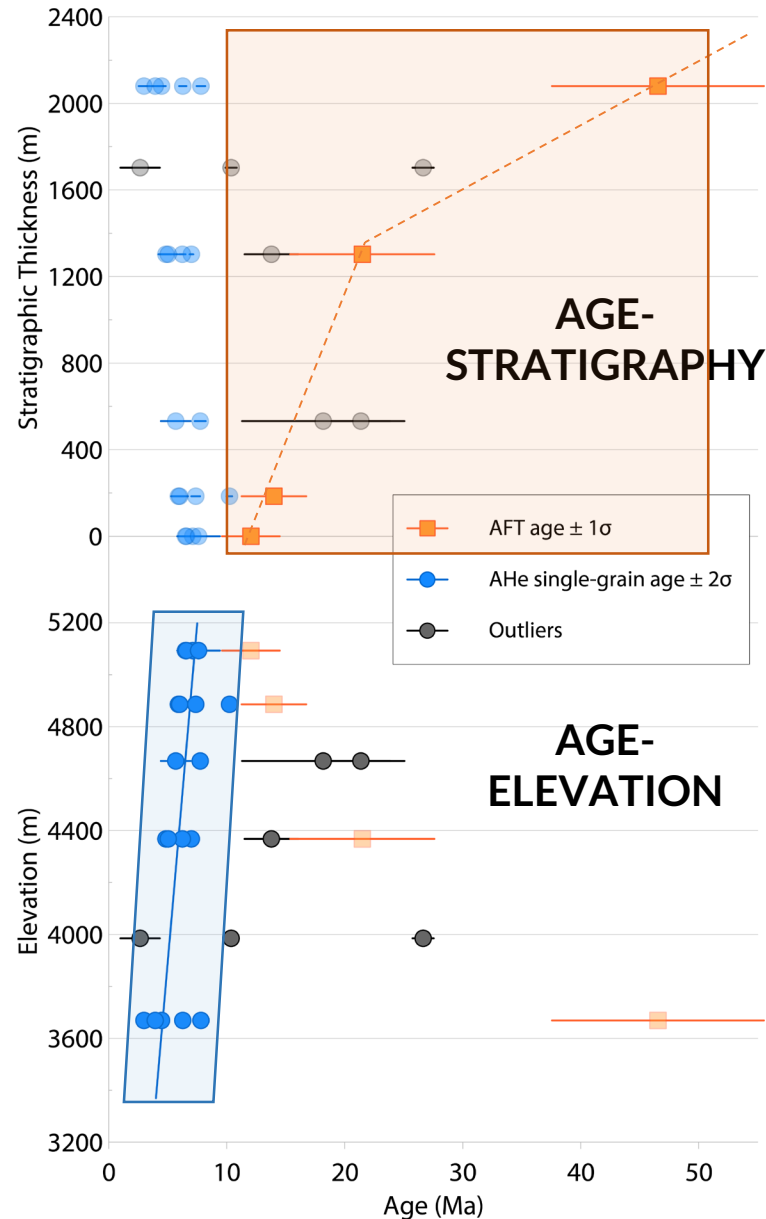




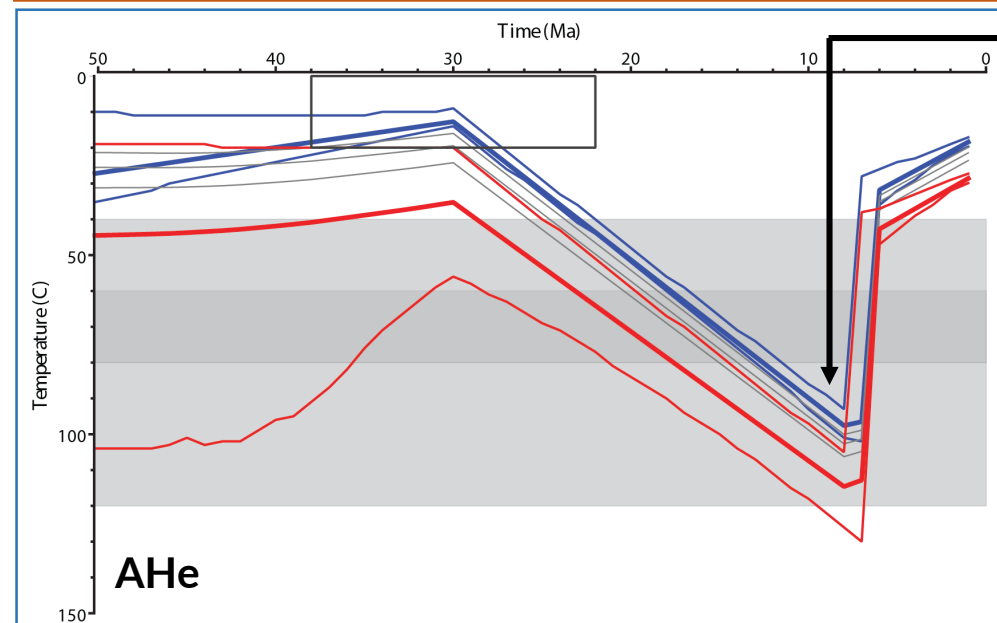
# MESOZOIC EXHUMATION



# ANDEAN EXHUMATION

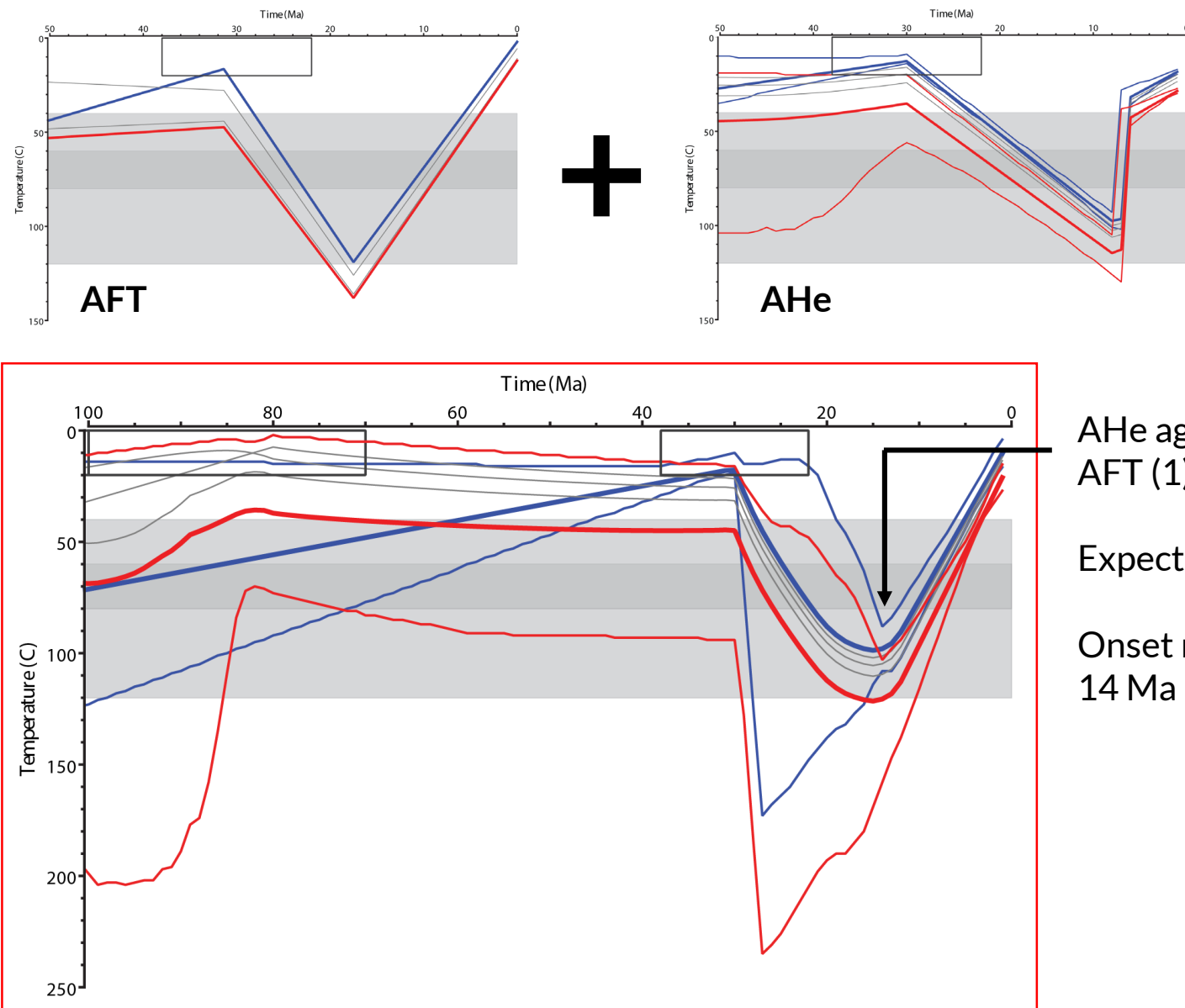
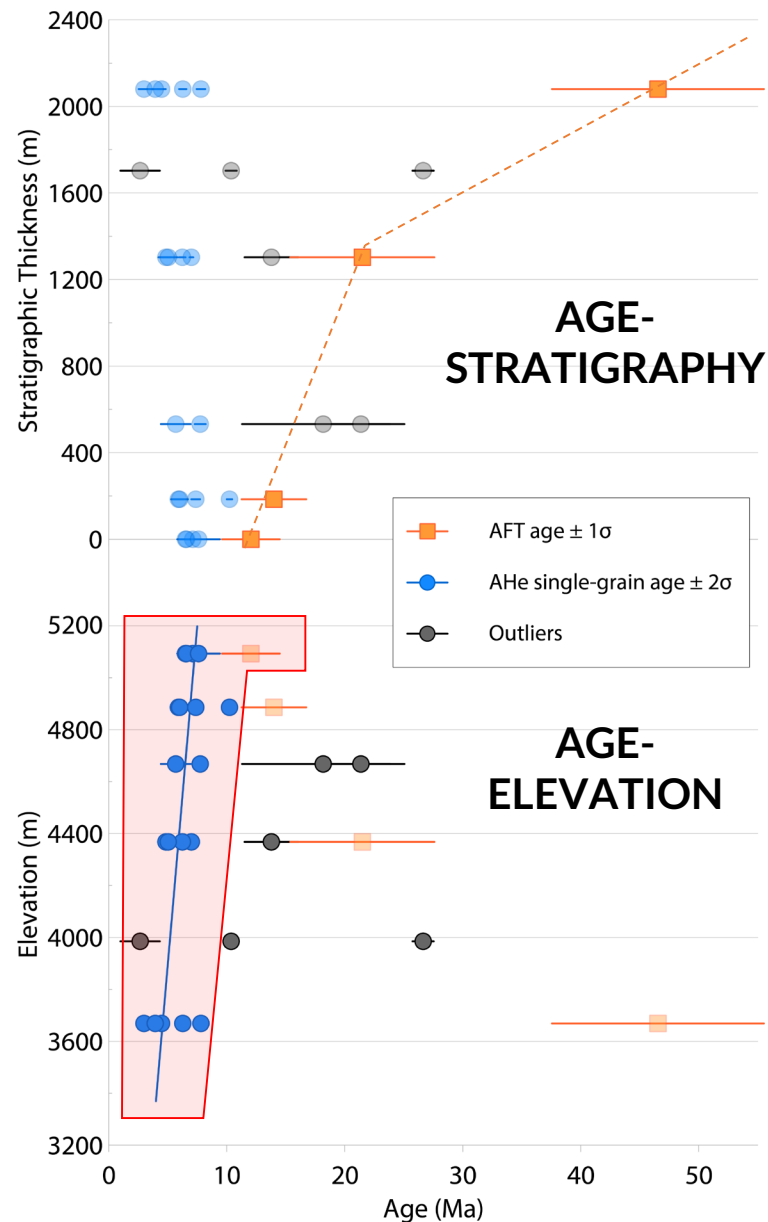


Age-stratigraphy setup  
Max. Likelihood model  
Onset at 17.5 Ma



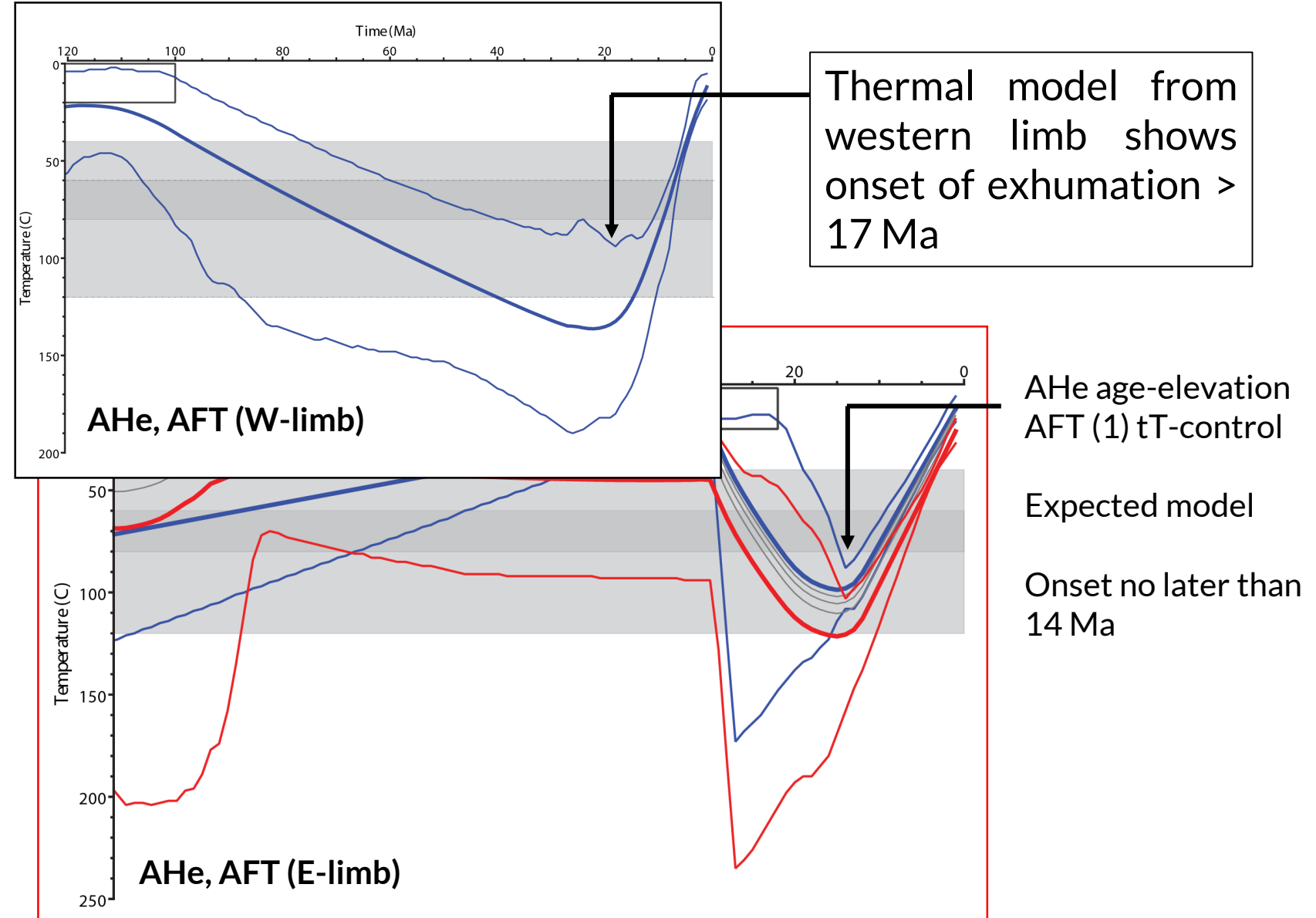
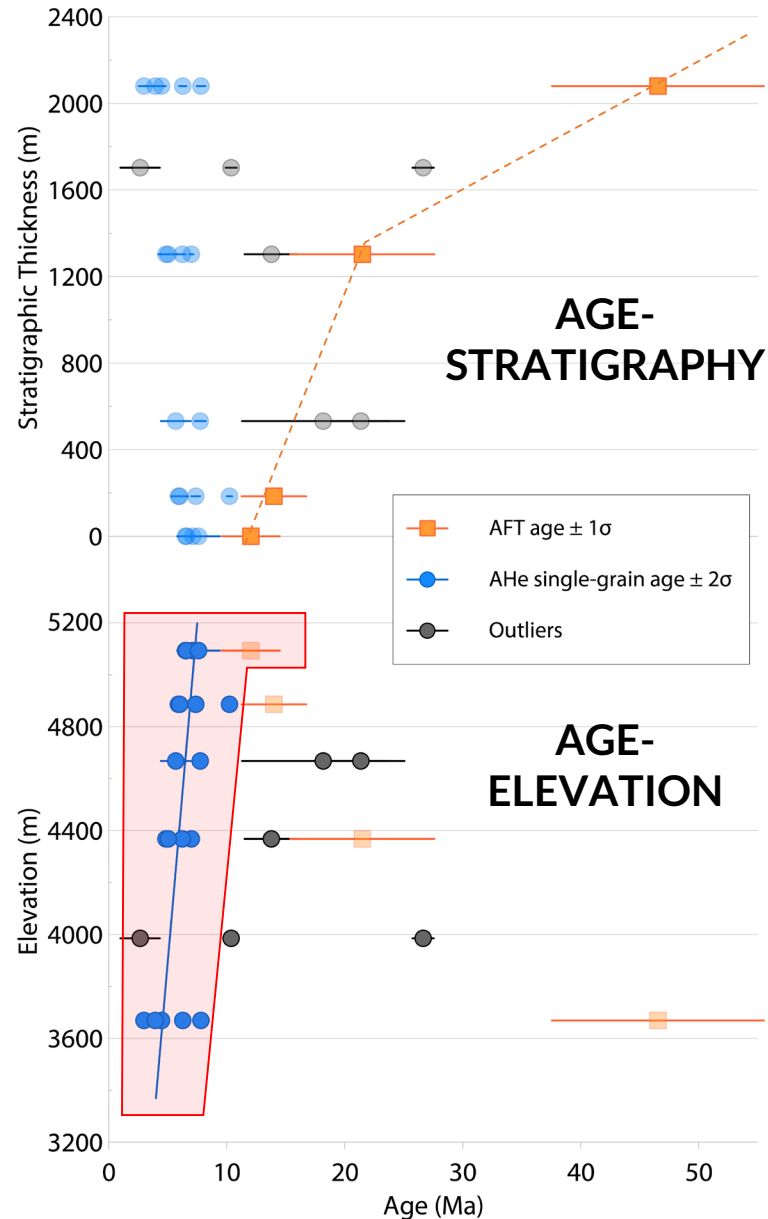
Age-elevation setup  
Expected model  
Onset 8-7 Ma

# ANDEAN EXHUMATION





# ANDEAN EXHUMATION





## MESOZOIC EXTENSION

- Jurassic(?) agglomerates form earliest syn-tectonic sediments within the westernmost Lomas de Olmedo basin
- Agglomerates mark pronounced activity along normal faults, independent of stratigraphic level
- Preliminary minimum age of pre-Salta Rift exhumation ~ 190 Ma

## ANDEAN SHORTENING AND INVERSION

- Thermal models show Oligocene-middle Miocene onset of exhumation, no later than 14 Ma (eastern limb)
- Middle Miocene upper constraint confirmed by data from western limb (Cianzo S.)



# Thank you!

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