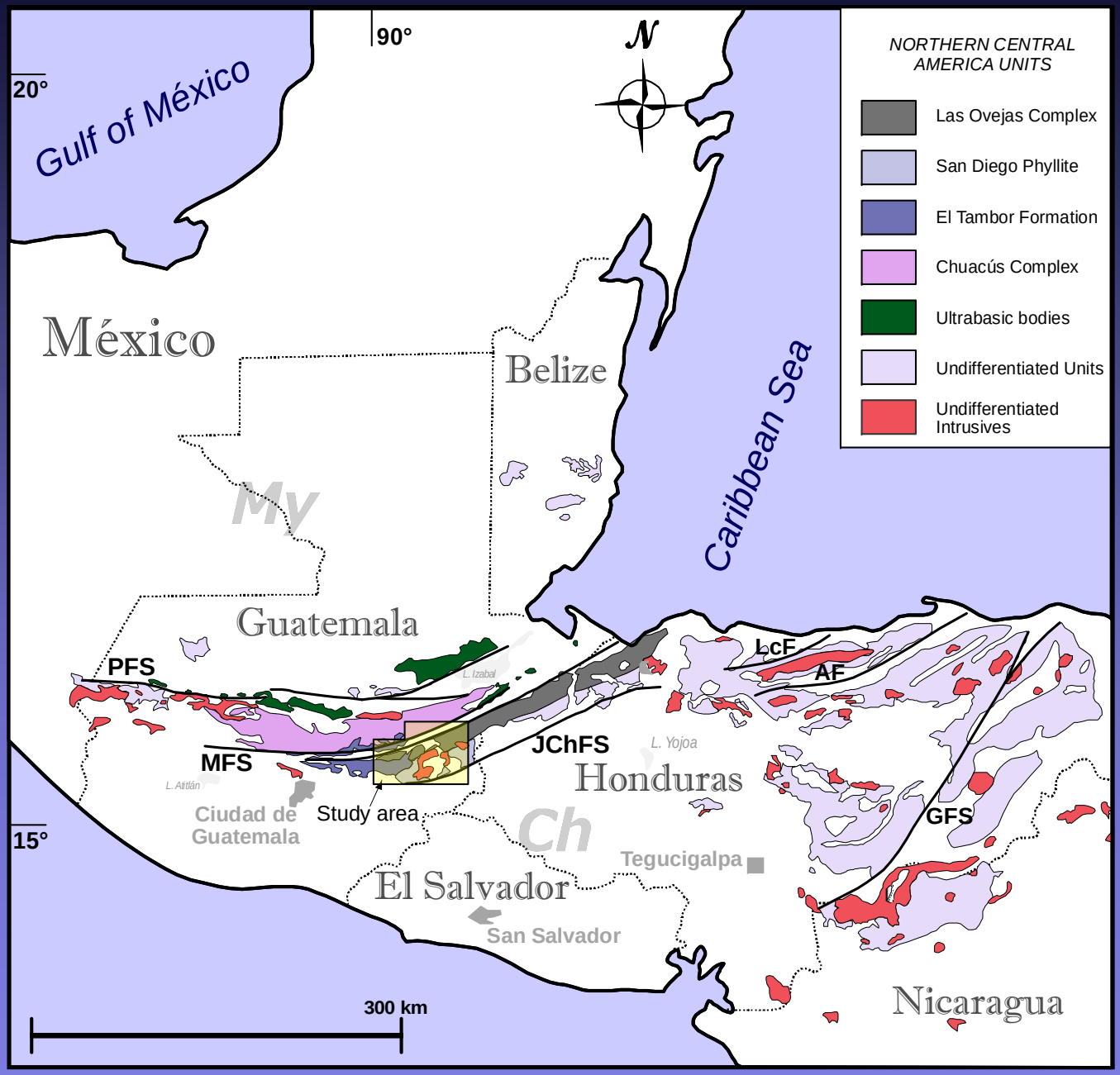
The Chortis Block - Southwestern Mexico Connection During The Late Mesozoic - Cenozoic: U-Pb Zircon Constraints

Rafael Torres De León[1]
Luigi A. Solari[2]
Fernando Ortega Gutiérrez[1]
Uwe Martens[3]

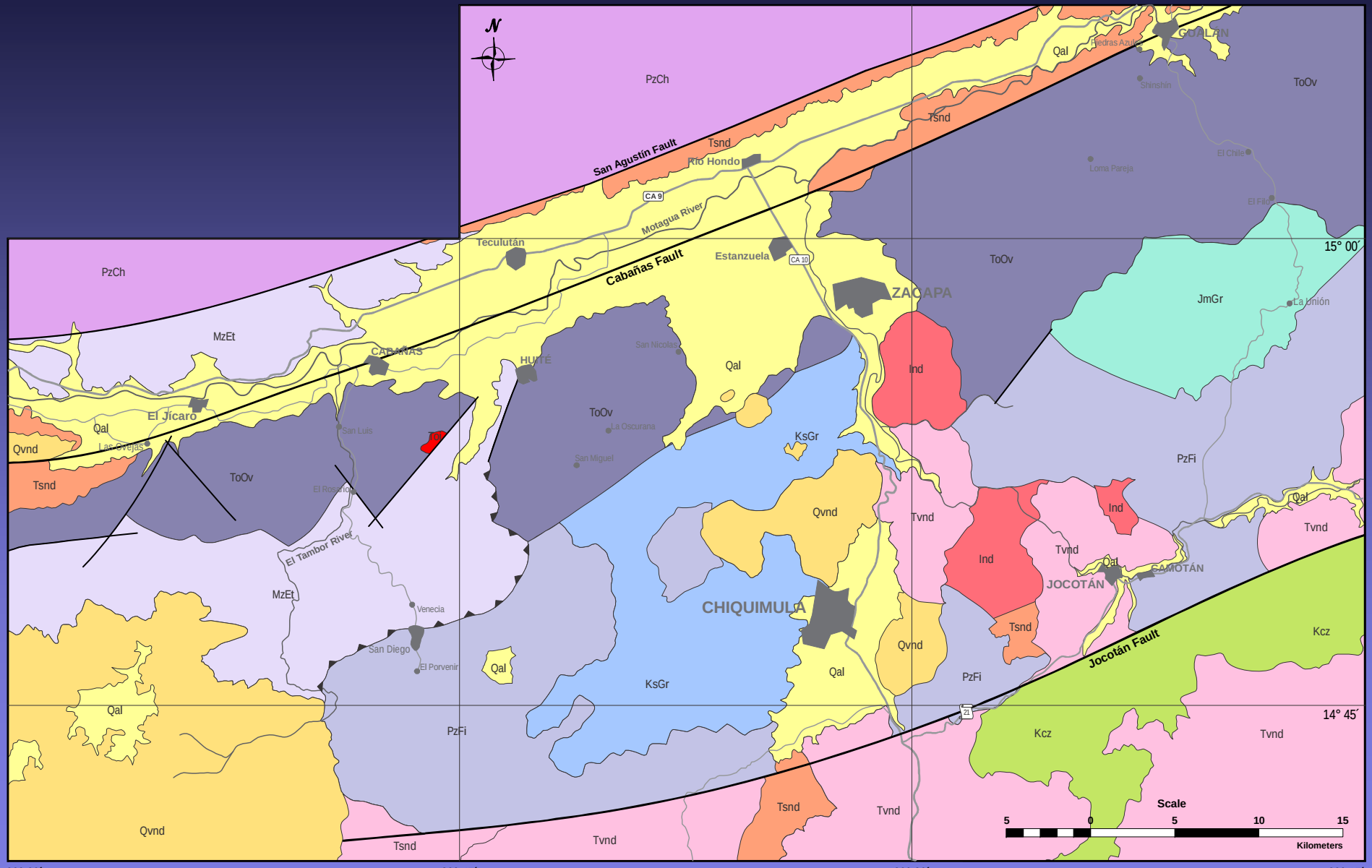
1: Instituto de Geología, UNAM, Ciudad de México, DF.
2: Centro de Geociencias, UNAM, Juriquilla, QRO.
3: Tectonic Analysis Ltd., Duncton, West Sussex.

Location


90°
20°
15°
N
Gulf of México
México
Belize
Caribbean Sea
Guatemala
El Salvador
Honduras
Nicaragua
PFS
MFS
JChFS
LcF
AF
GFS
Study area
Ciudad de Guatemala
Tegucigalpa
San Salvador
L. Izabal
L. Yojoa
L. Atitlán
300 km
NORTHERN CENTRAL AMERICA UNITS
Las Ovejas Complex
San Diego Phyllite
El Tambor Formation
Chuacús Complex
Ultrabasic bodies
Undifferentiated Units
Undifferentiated Intrusives

Geology

Geological Map of the central-west Region of the Motagua River Basin



Lithologic Units of Las Ovejas Complex

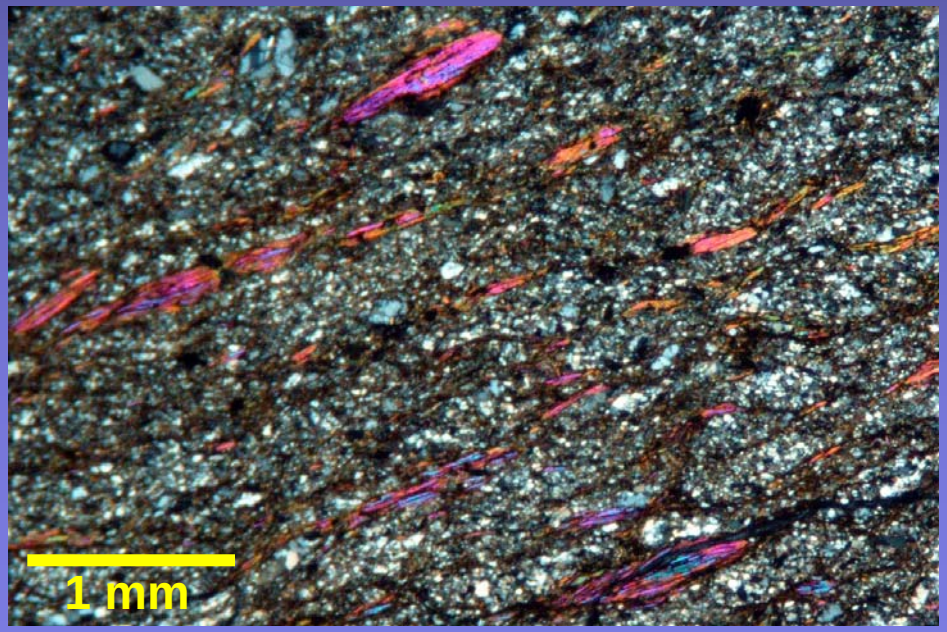
Basal Ensemble

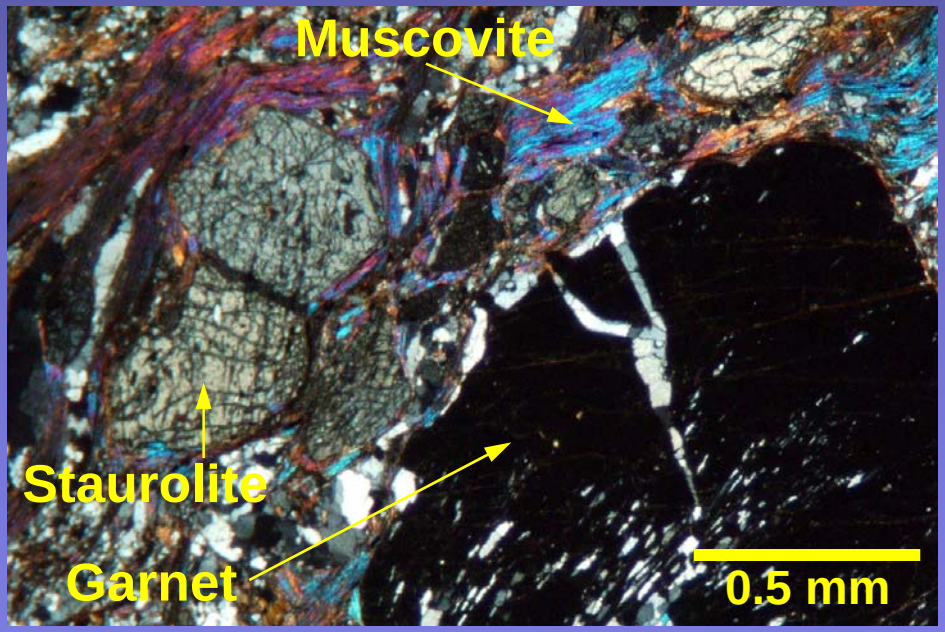
- Schists
- Gneisses
- Amphibolites
- Marbles
- Metavolcanic Rocks
- Quartzites

Intrusive Ensemble

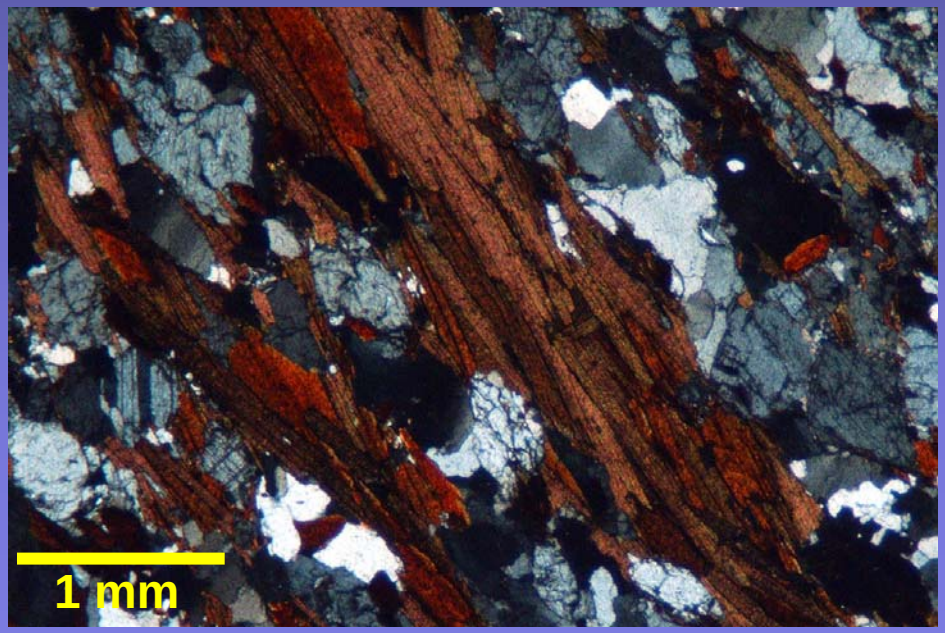
- Loma Pareja Metagranitoid, Deformed Granodiorites, Deformed Diorites, Deformed Pegmatites

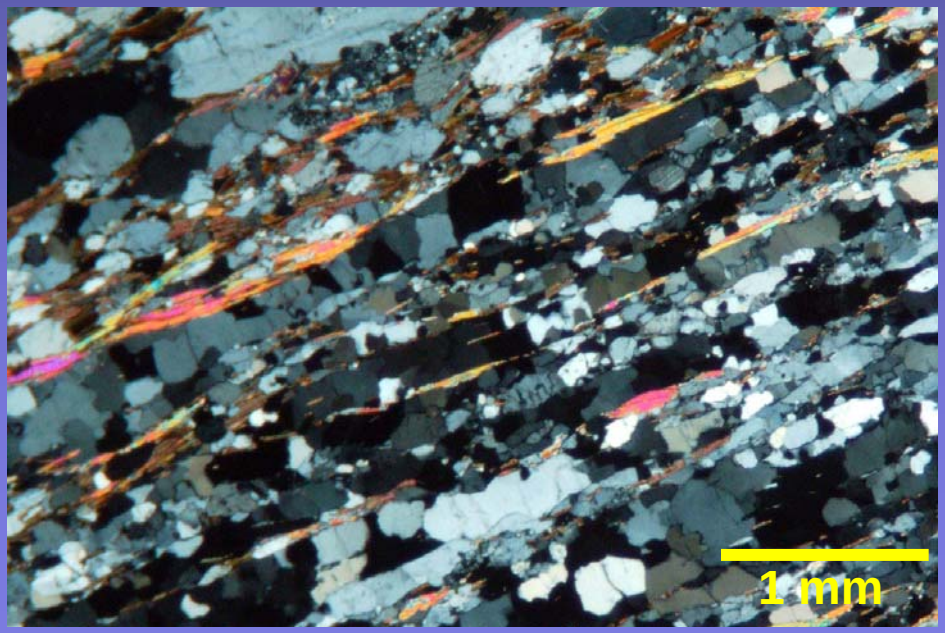
Schists



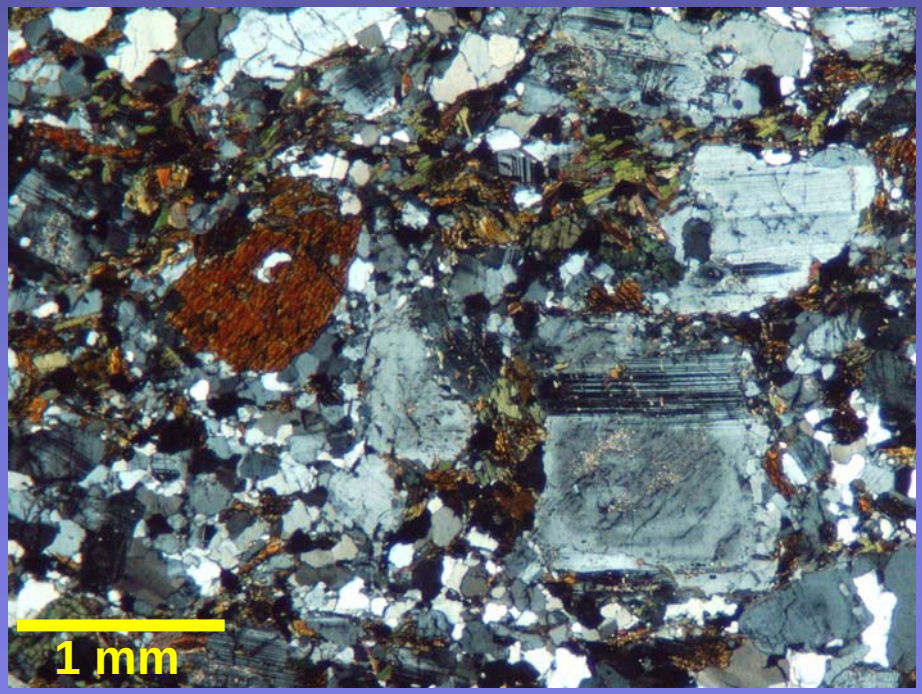


Gneisses

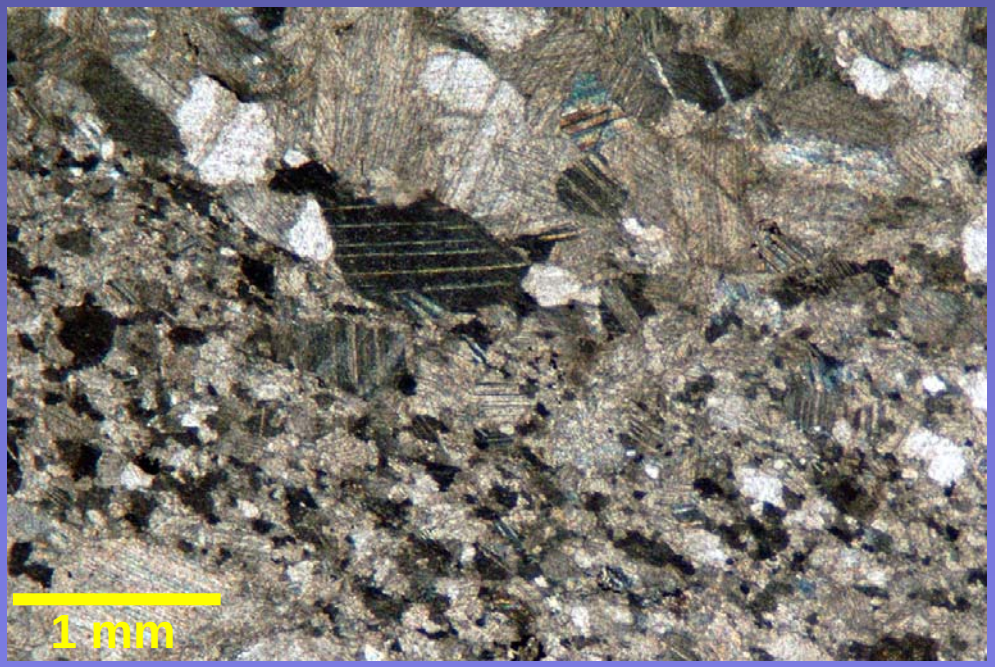




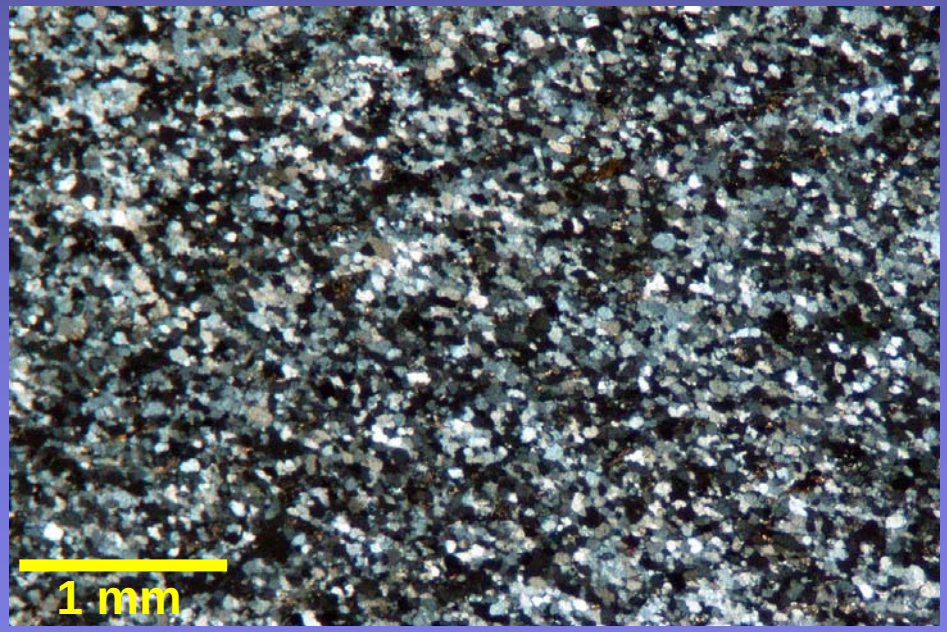
Amphibolites

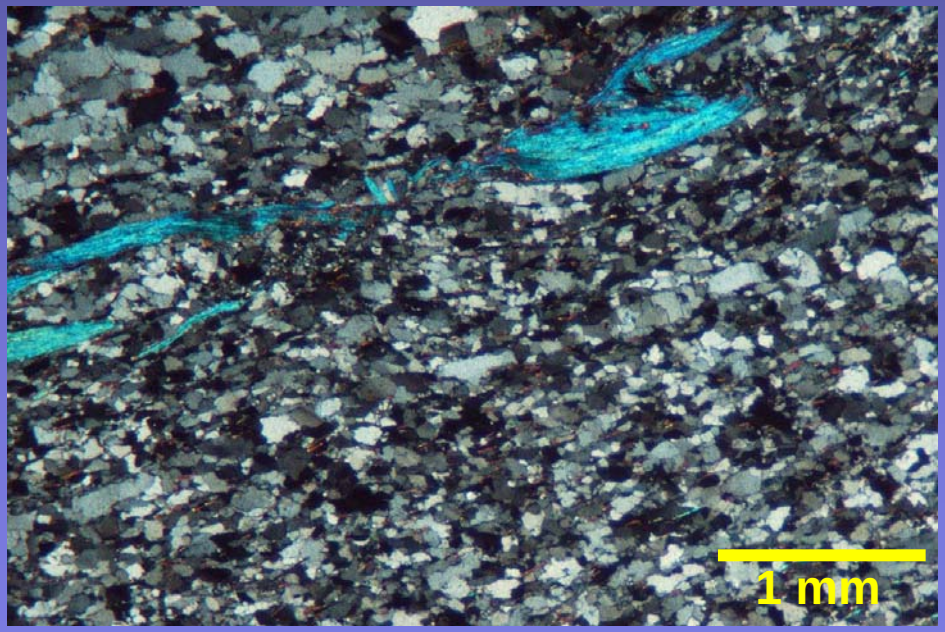


Marbles

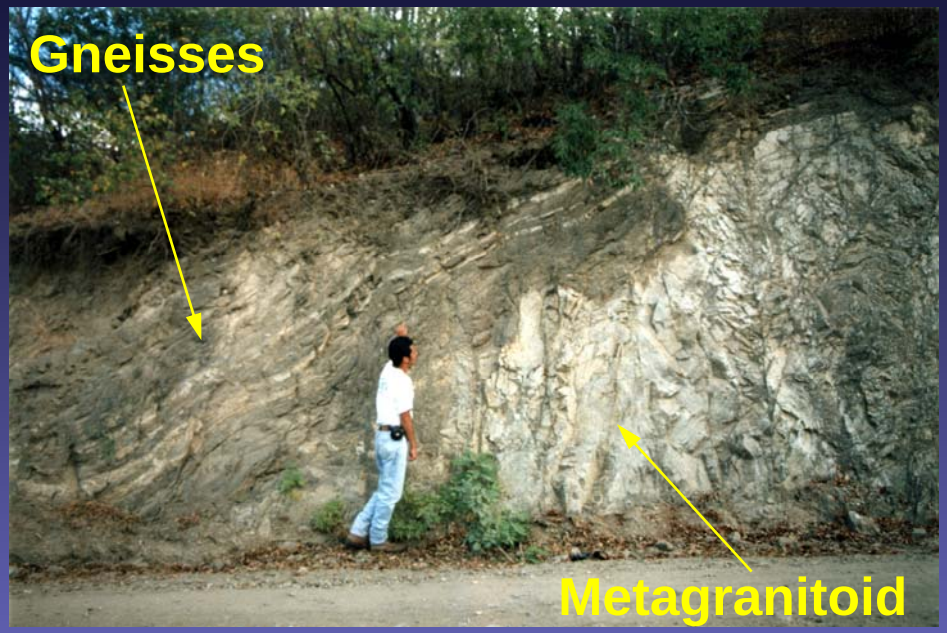


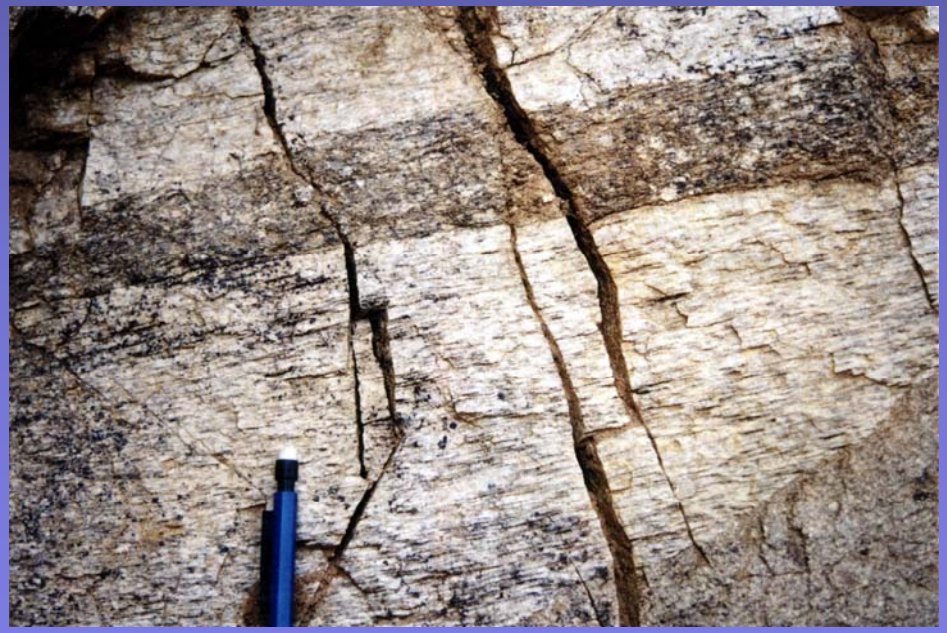
Quartzites



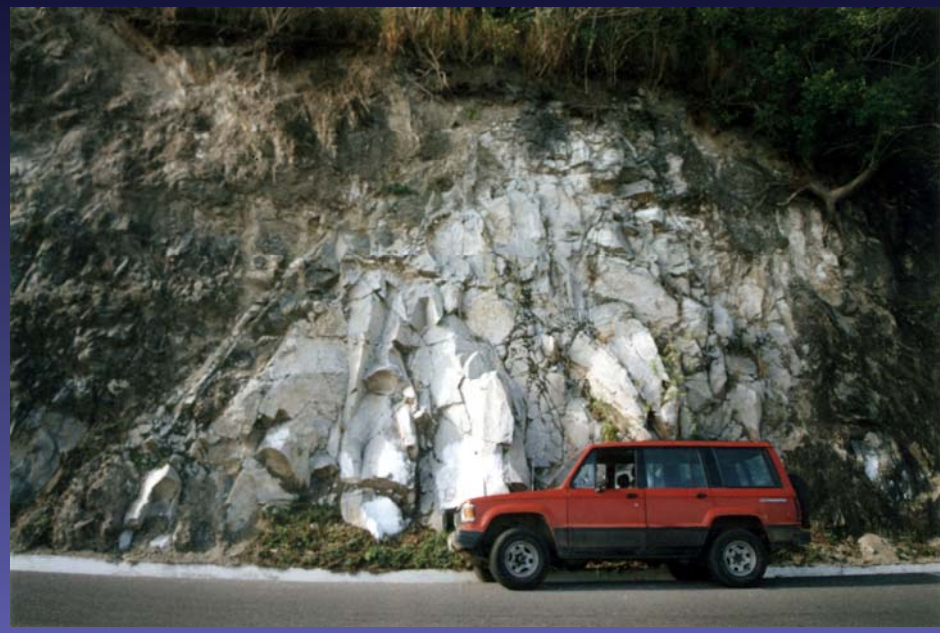


Loma Pareja Metagranitoid





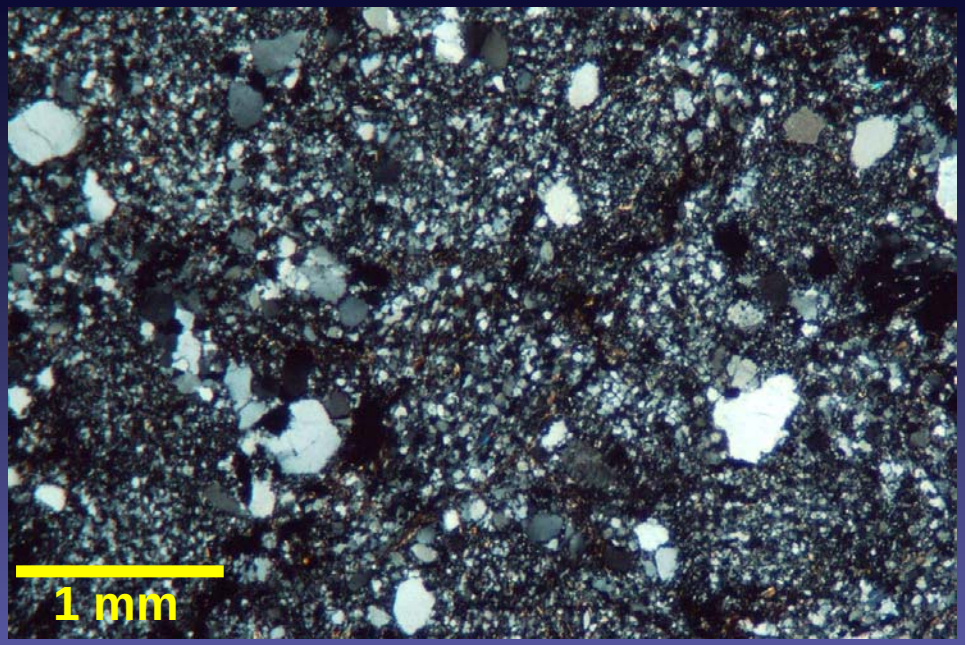
Deformed Granodiorite

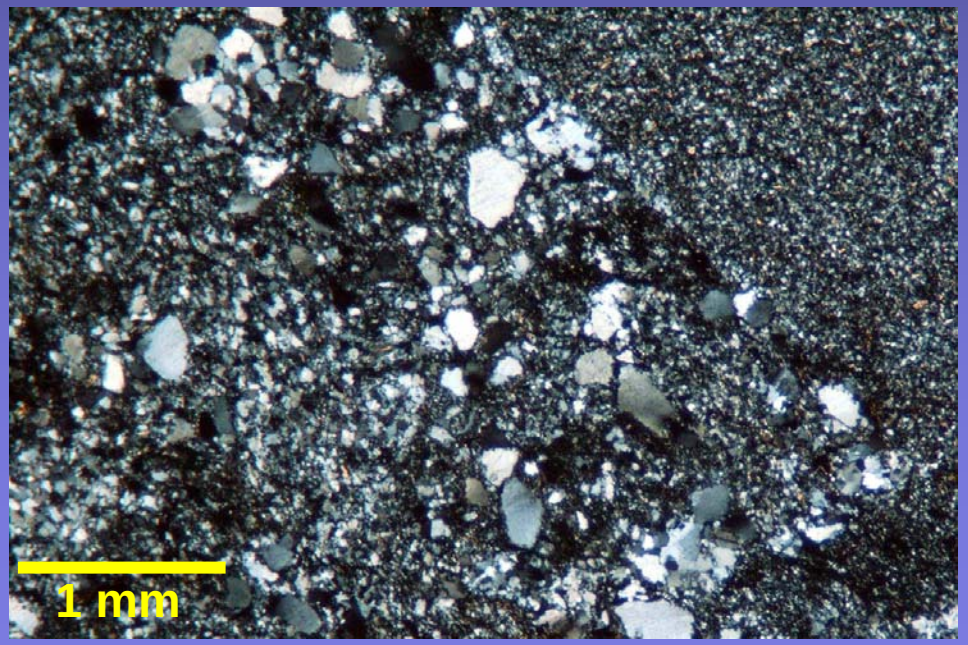


Deformed Pegmatites

San Diego Phyllite

San Diego Phyllite

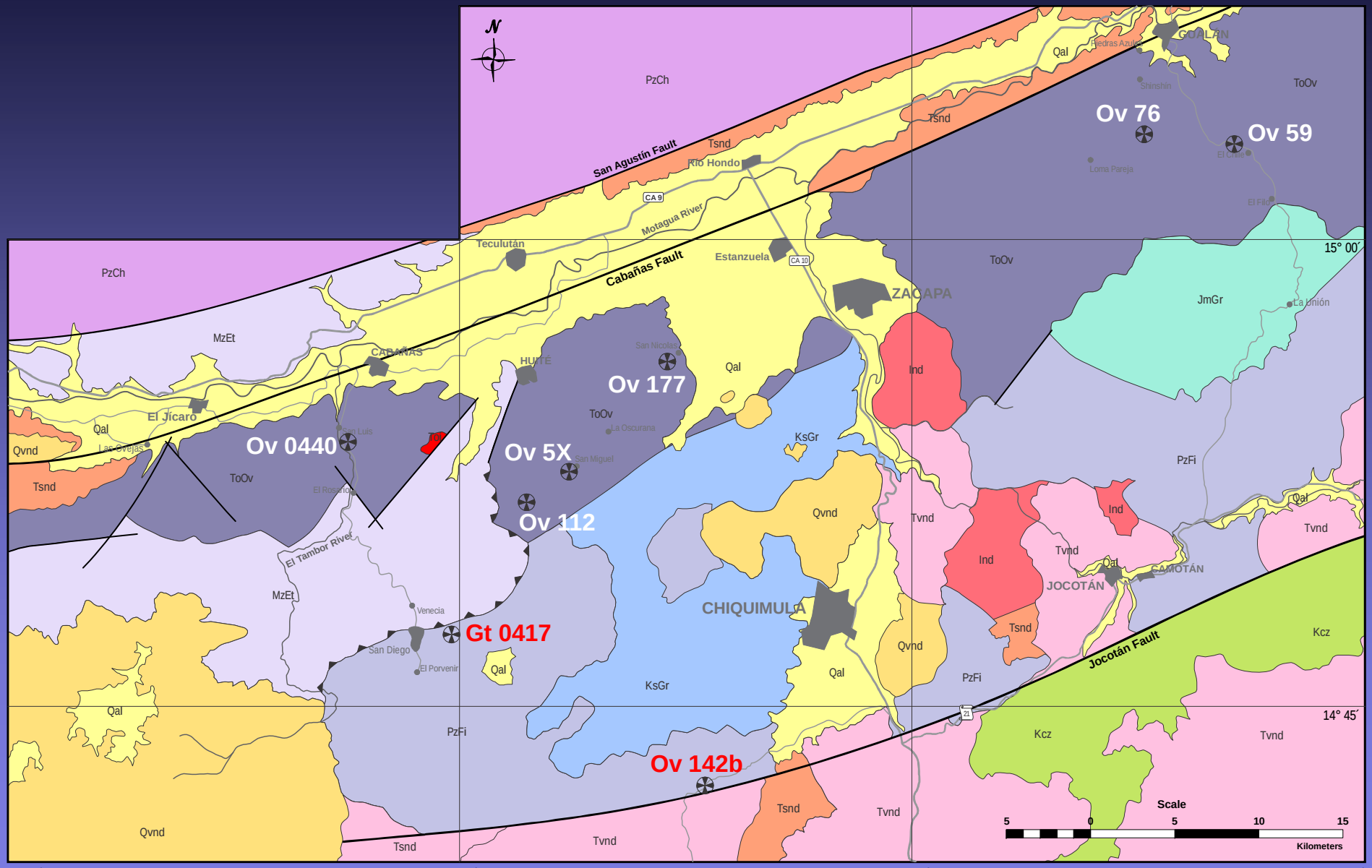




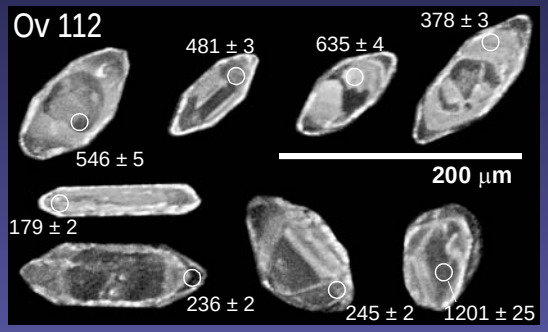
Meta-sandstones

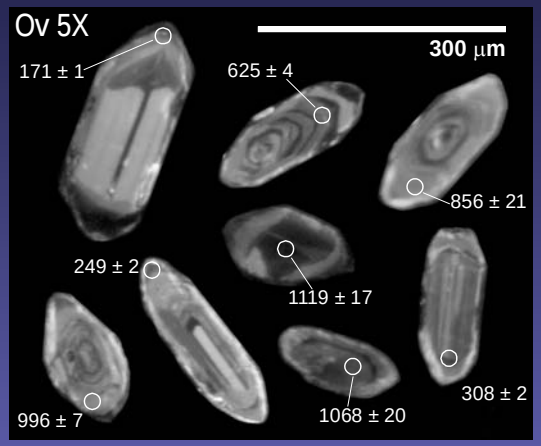
Geochronology

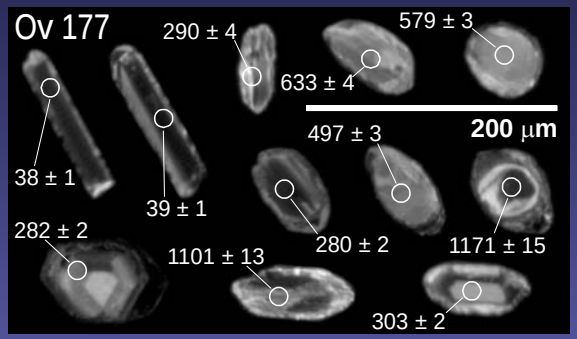
Samples Location

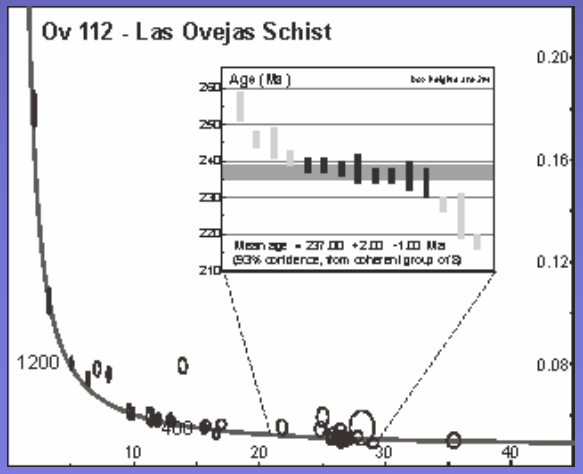


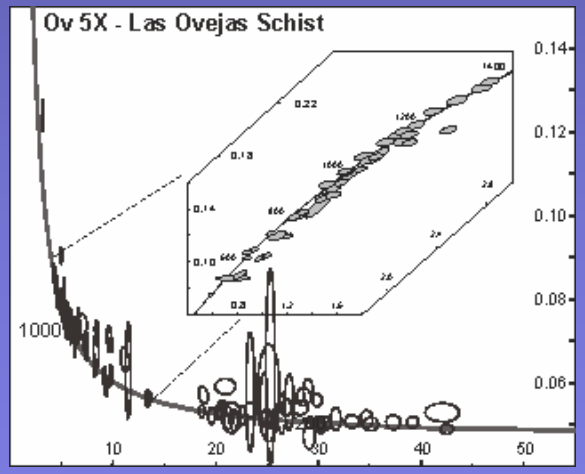
Zircon Populations of Las Ovejas Schists

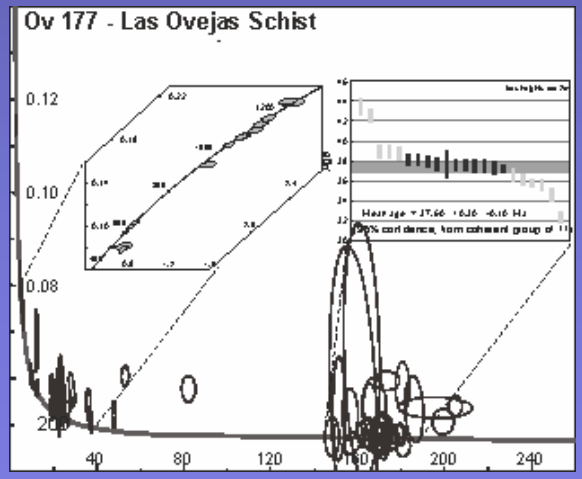




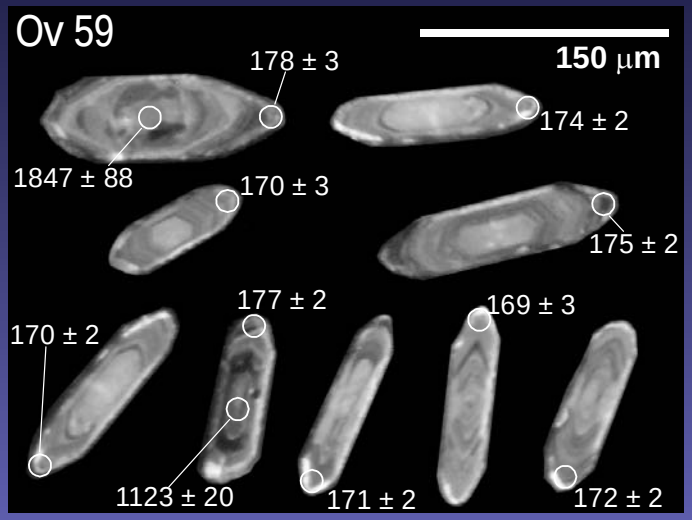


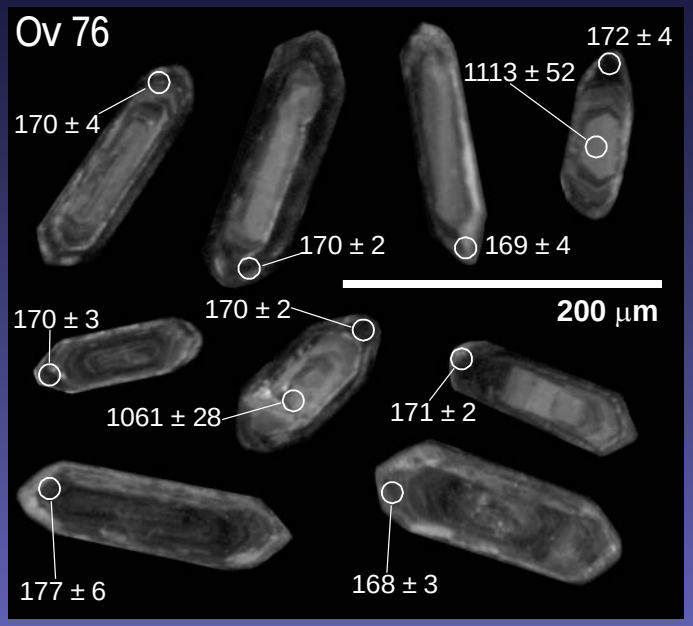


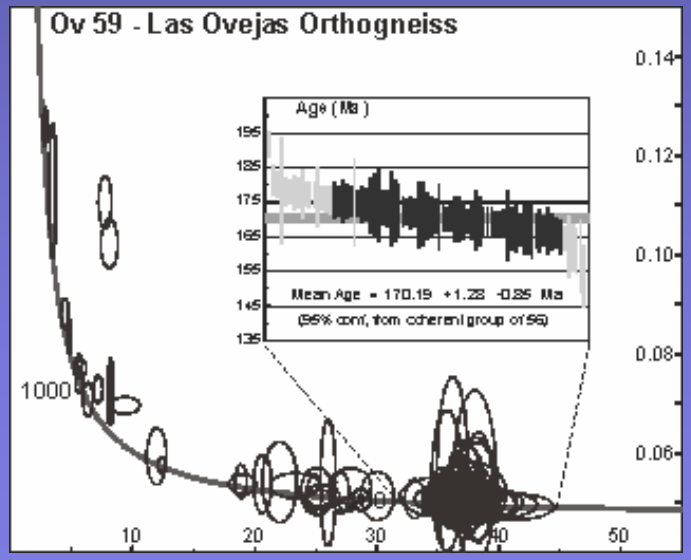


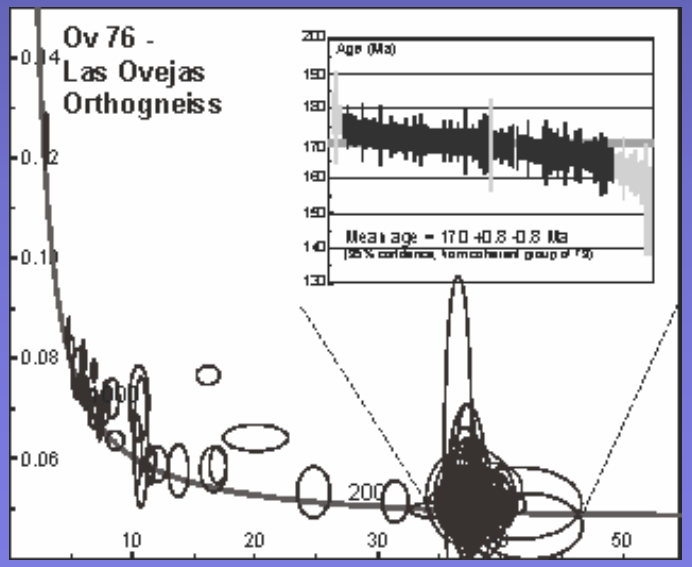


Zircon Populations of Las Ovejas Gneisses

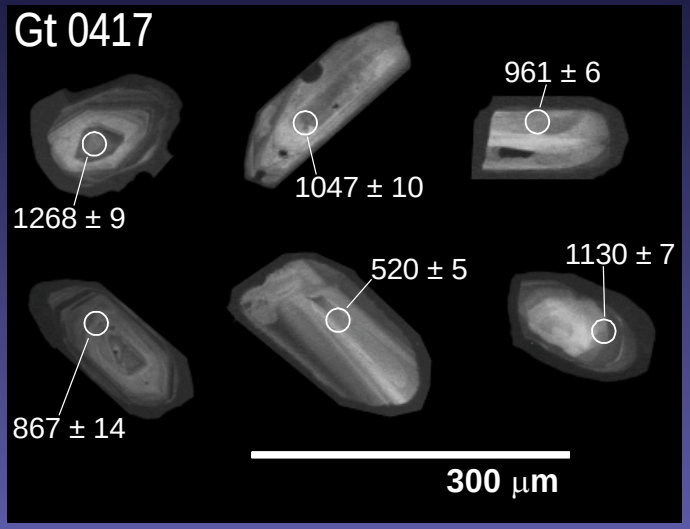


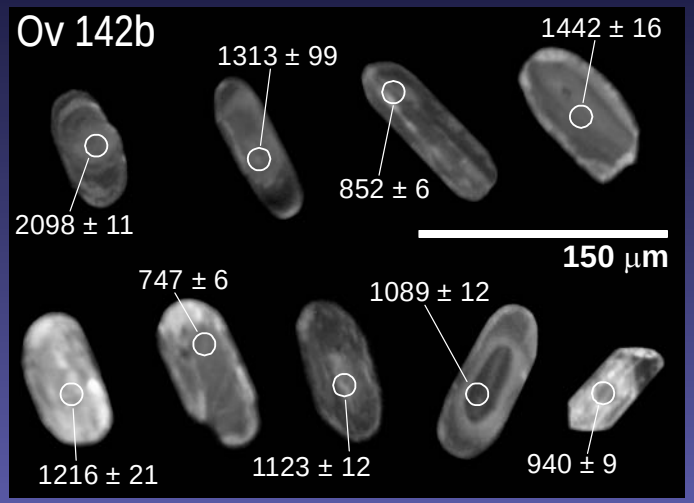


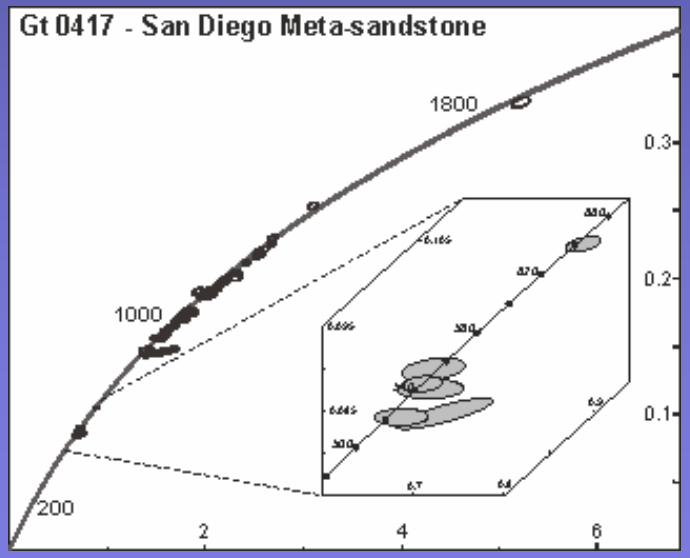


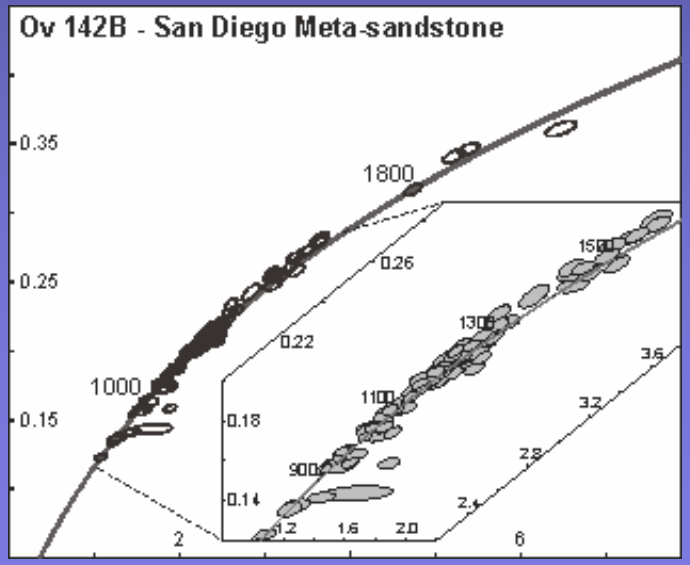


Zircon Populations of San Diego Meta-sanstones

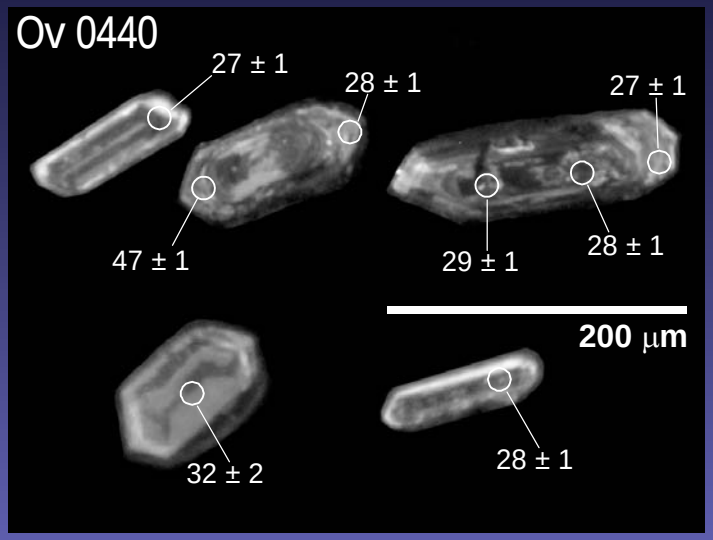


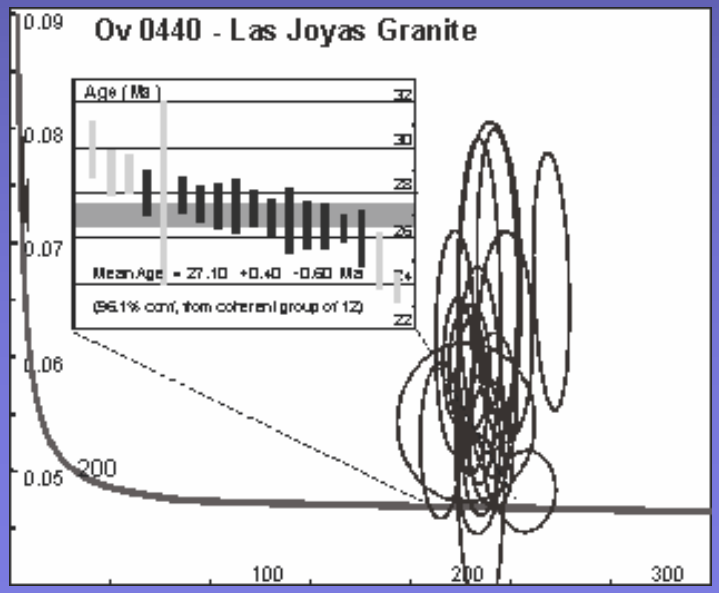




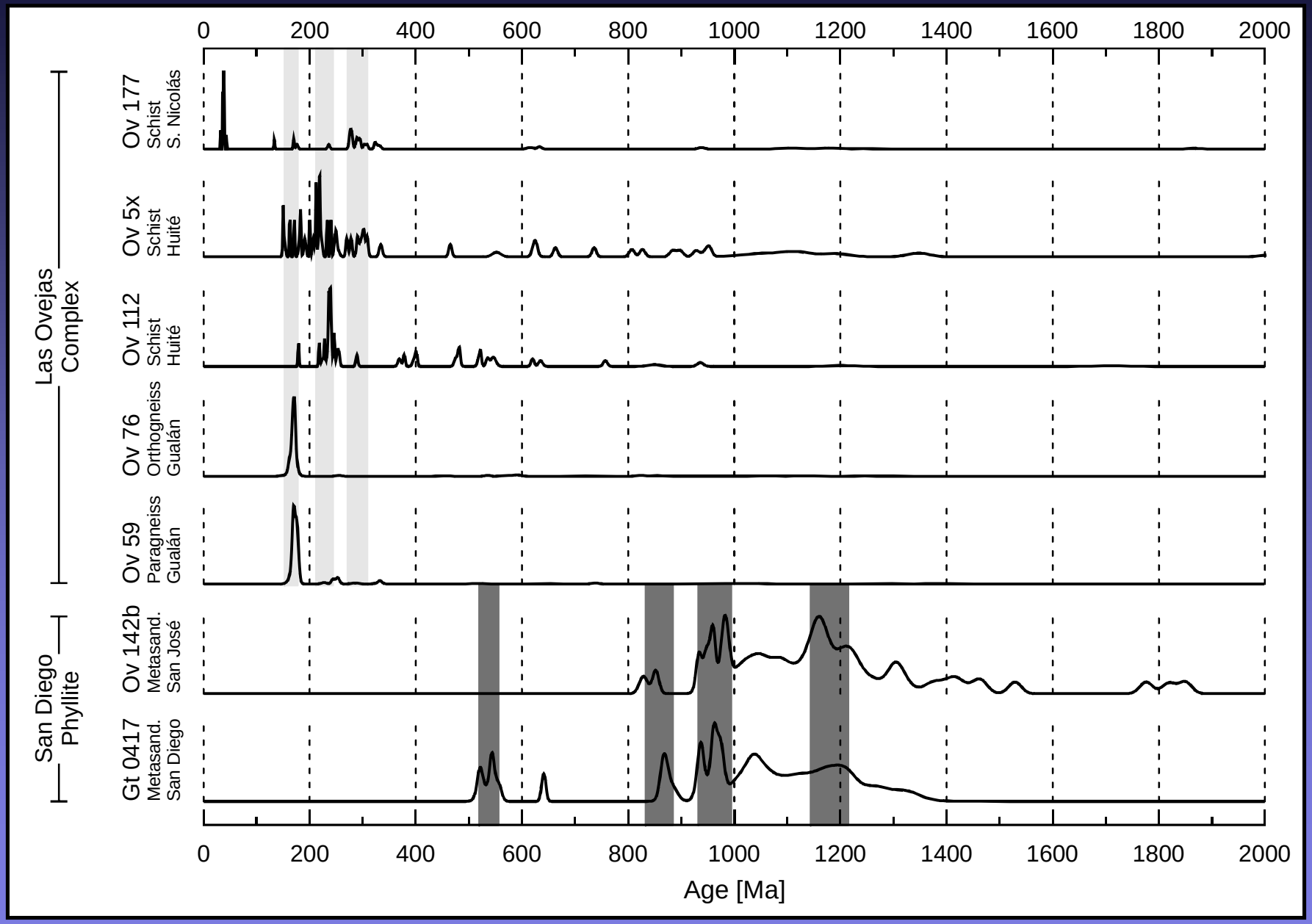


Zircon Population of Las Joyas Granite Dike



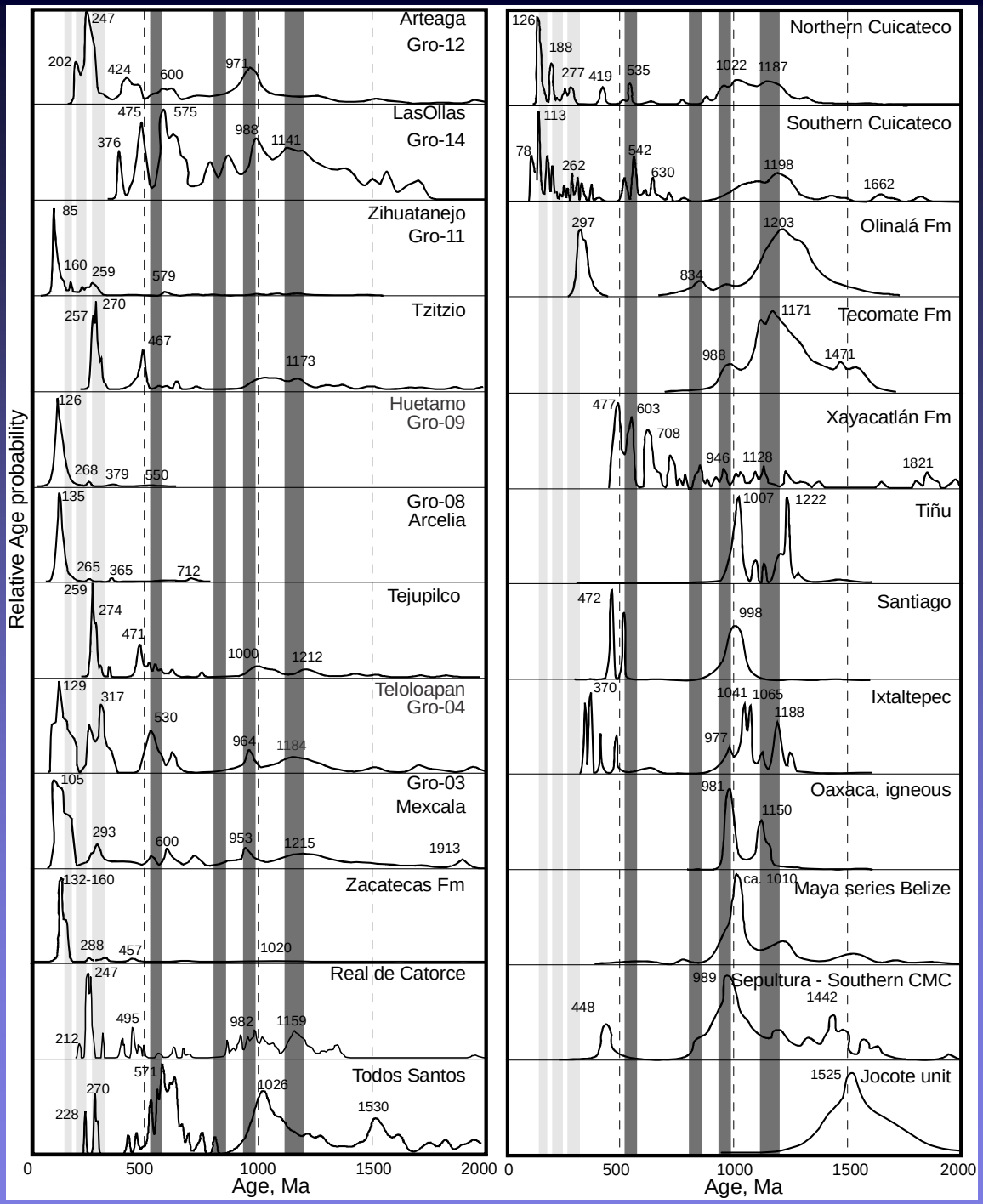


Age Components of Las Ovejas and San Diego

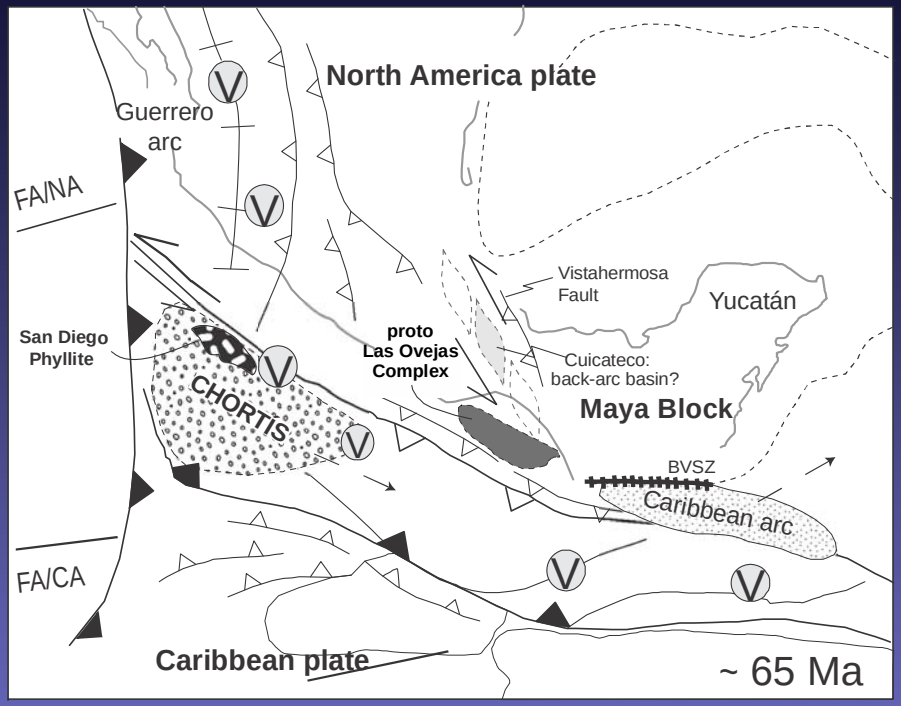


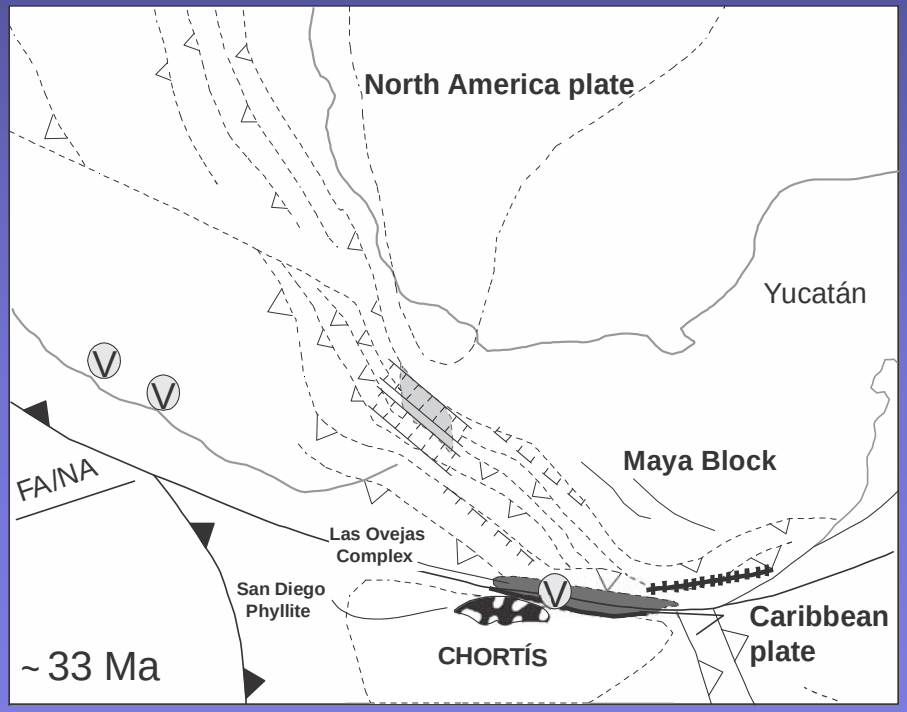
Correlation & Model

Comparison of Las Ovejas and San Diego age distributions with main Southern Mexico Lithologies



Proposed positions for the Chortis Block and Las Ovejas Complex





Conclusions

The protoliths of the basal ensemble of the Las Ovejas Complex were sedimentary and volcanic sequences whose main age component is Mesozoic, while for the San Diego Phyllite are meso to neo-Proterozoic. This data show that the Las Ovejas Complex and San Diego Phyllite are two different lithostratigraphic units with an independent geological history perhaps until the Oligocene.

The relationship between age components of the samples of Las Ovejas Complex suggest that belong to a single coherent geological entity, which strengthens the idea that the Las Ovejas Complex is a tectonic terrane possibly allochthonous to the Chortis Block.