

Implications of the Vincent Gap region of the eastern San Gabriel Mountains for the Neogene history of southern California



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The San Andreas Fault System

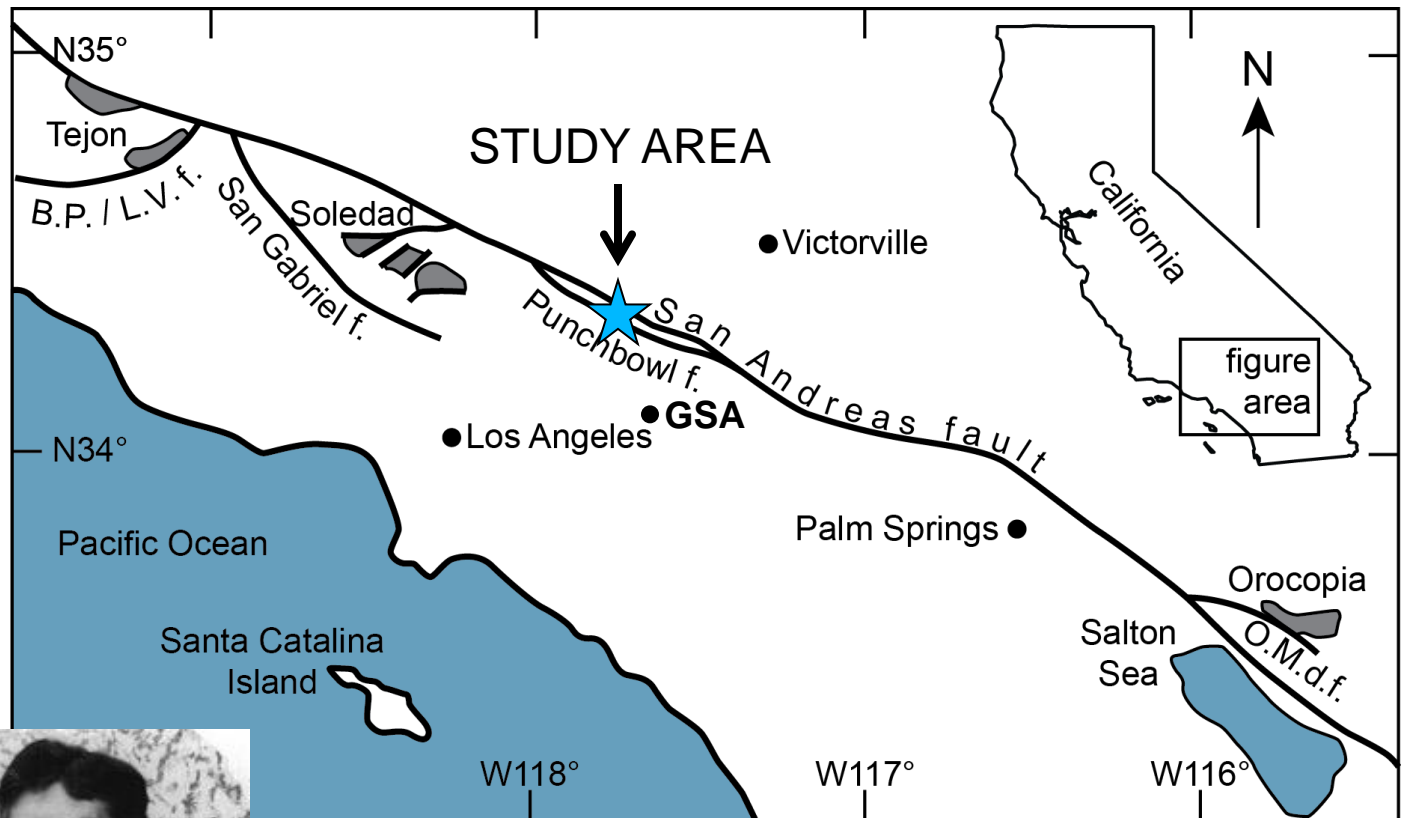


Figure after Frizzell and Weigand (1993) and Law et al. (2001).



1 – Oligocene to Lower Miocene

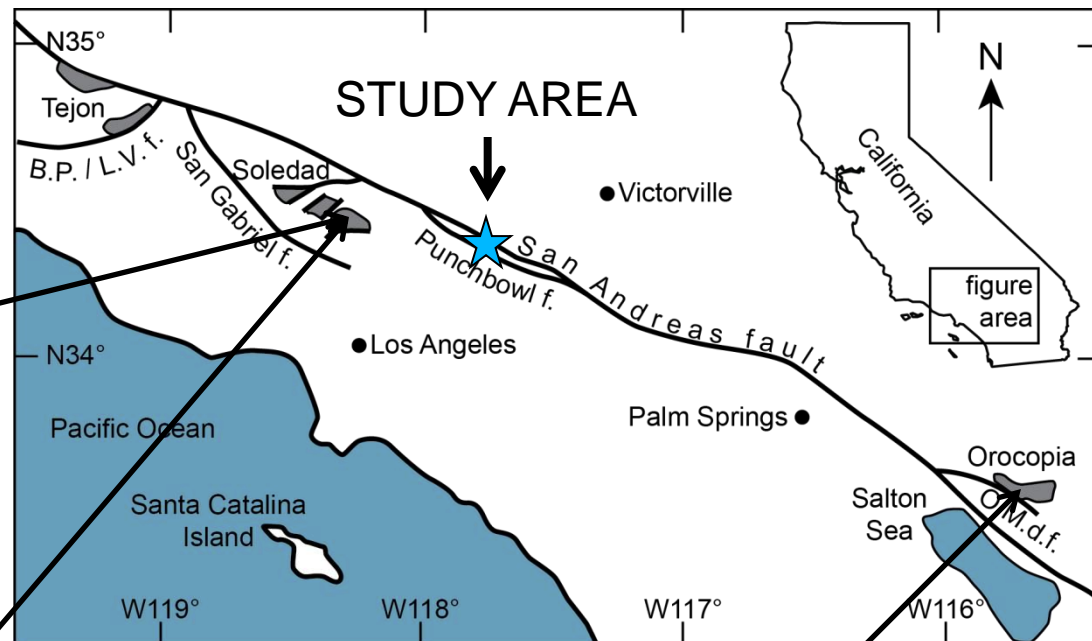
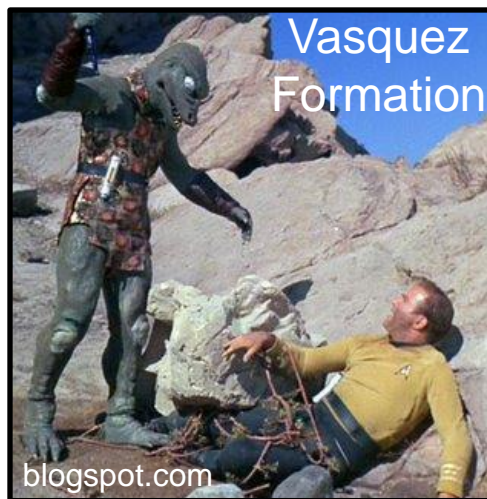


Figure after Frizzell and Weigand (1993) and Law et al. (2001).



2 – Middle Miocene

Tick Canyon Formation

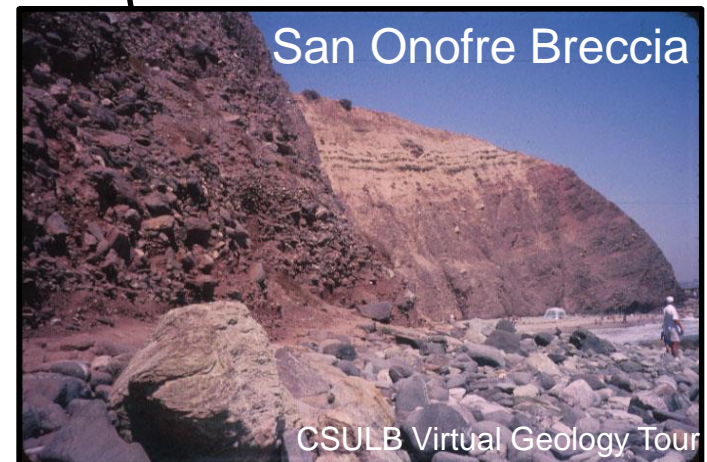


San Onofre Breccia



Figure after Frizzell and Weigand (1993) and Law et al. (2001).

San Onofre Breccia



3 – Middle to Upper Miocene

Caliente Formation

Mint Canyon Formation

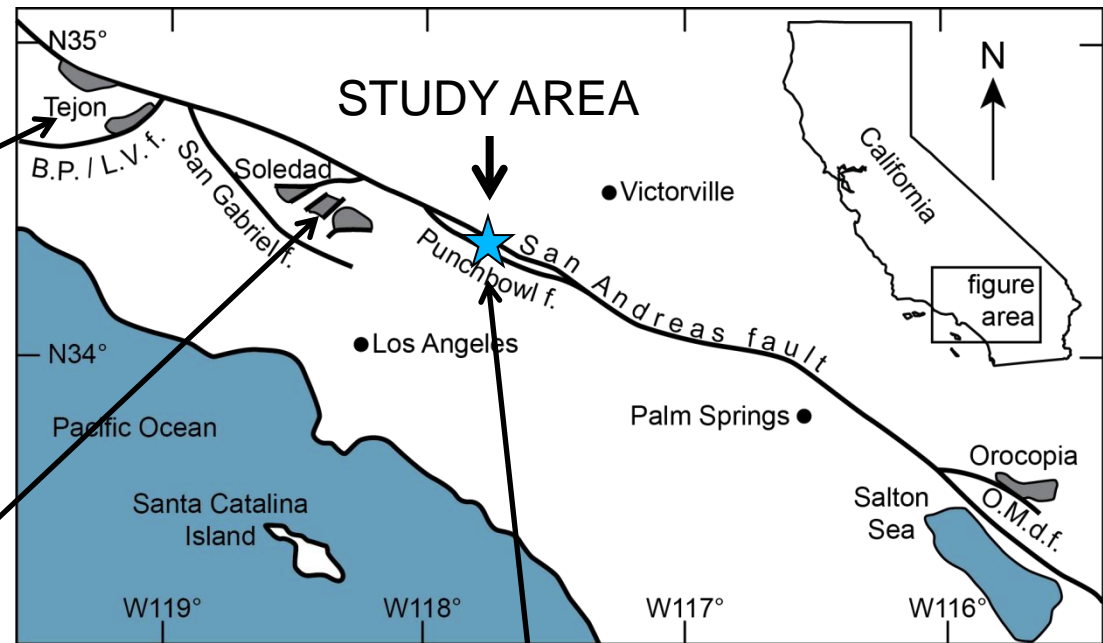
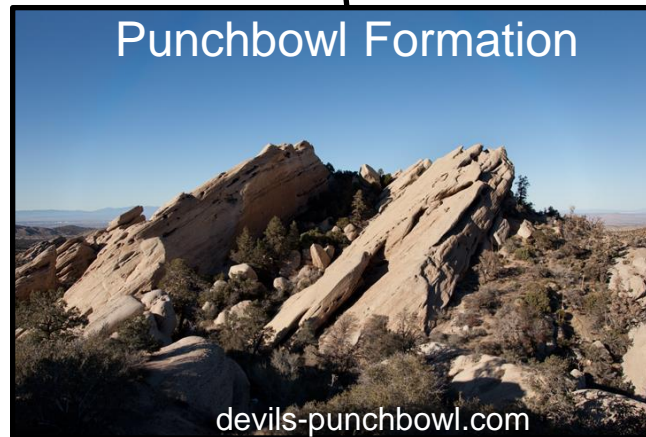
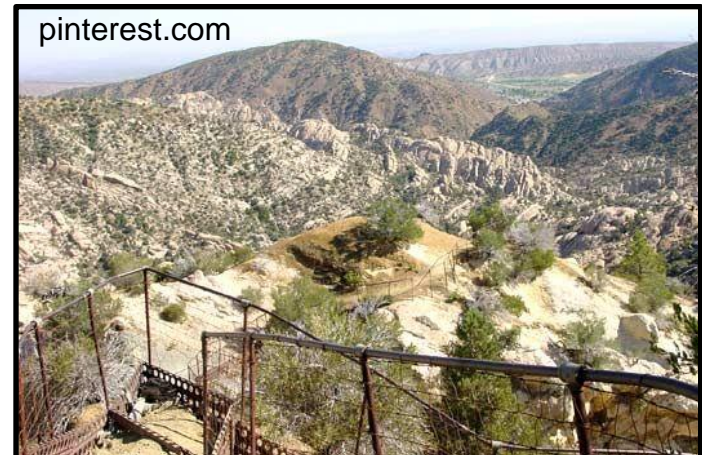
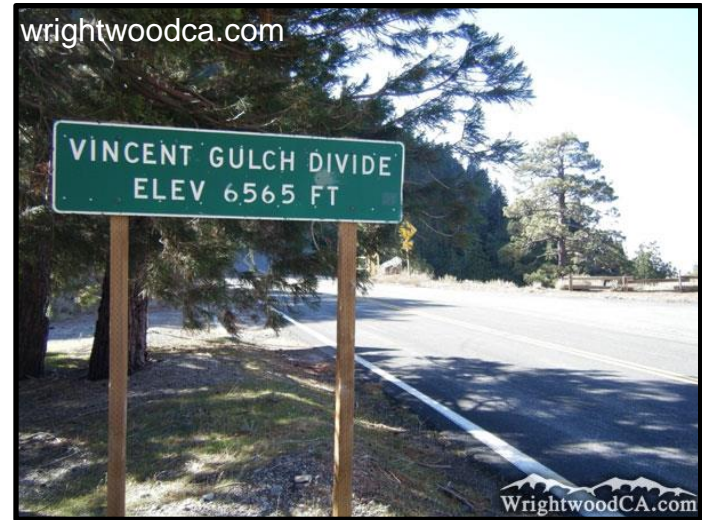


Figure after Frizzell and Weigand (1993) and Law et al. (2001).

Punchbowl Formation



Study Area: The Vincent Gap Region



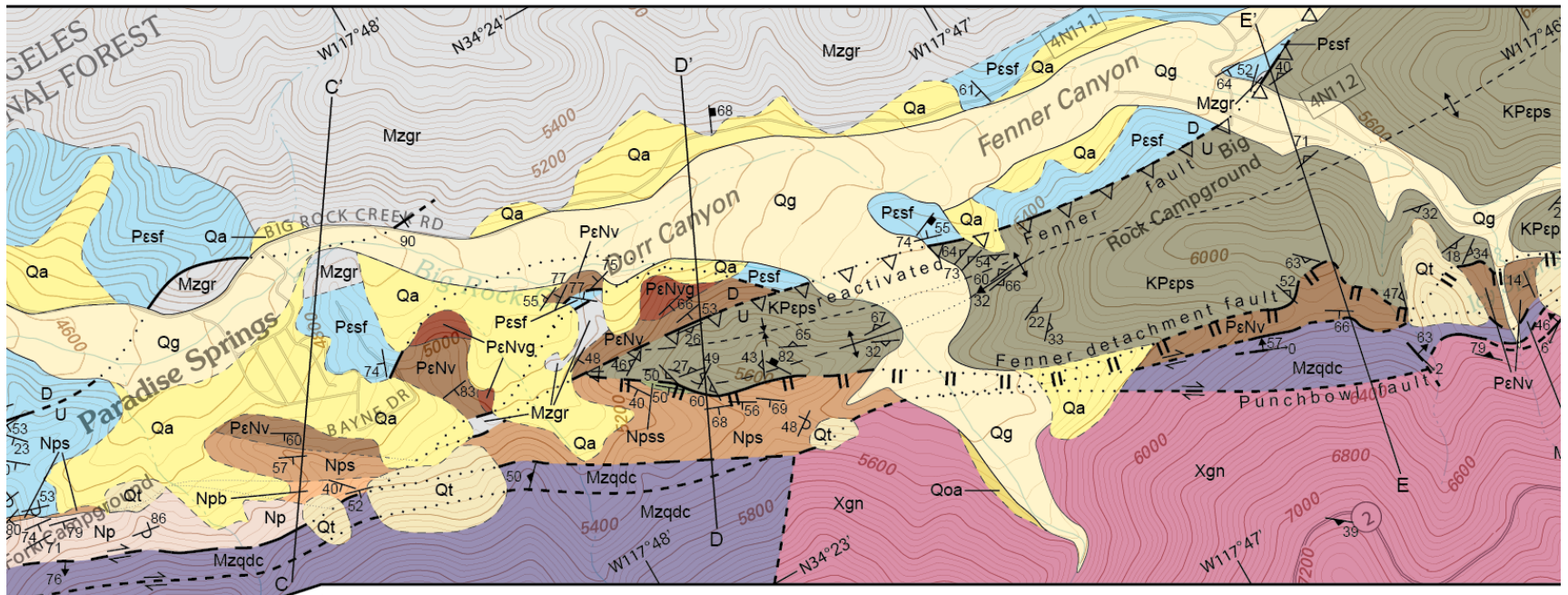
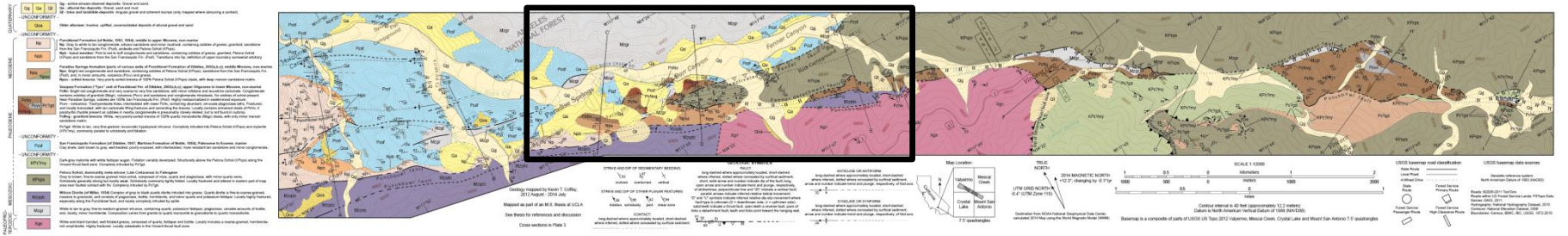
Methods



- Field mapping
- Conglomerate composition counts
- Paleocurrent indicator measurements
- Sandstone composition counts
- Detrital-zircon dating
- Igneous-zircon dating
- Volcanic trace-element analysis

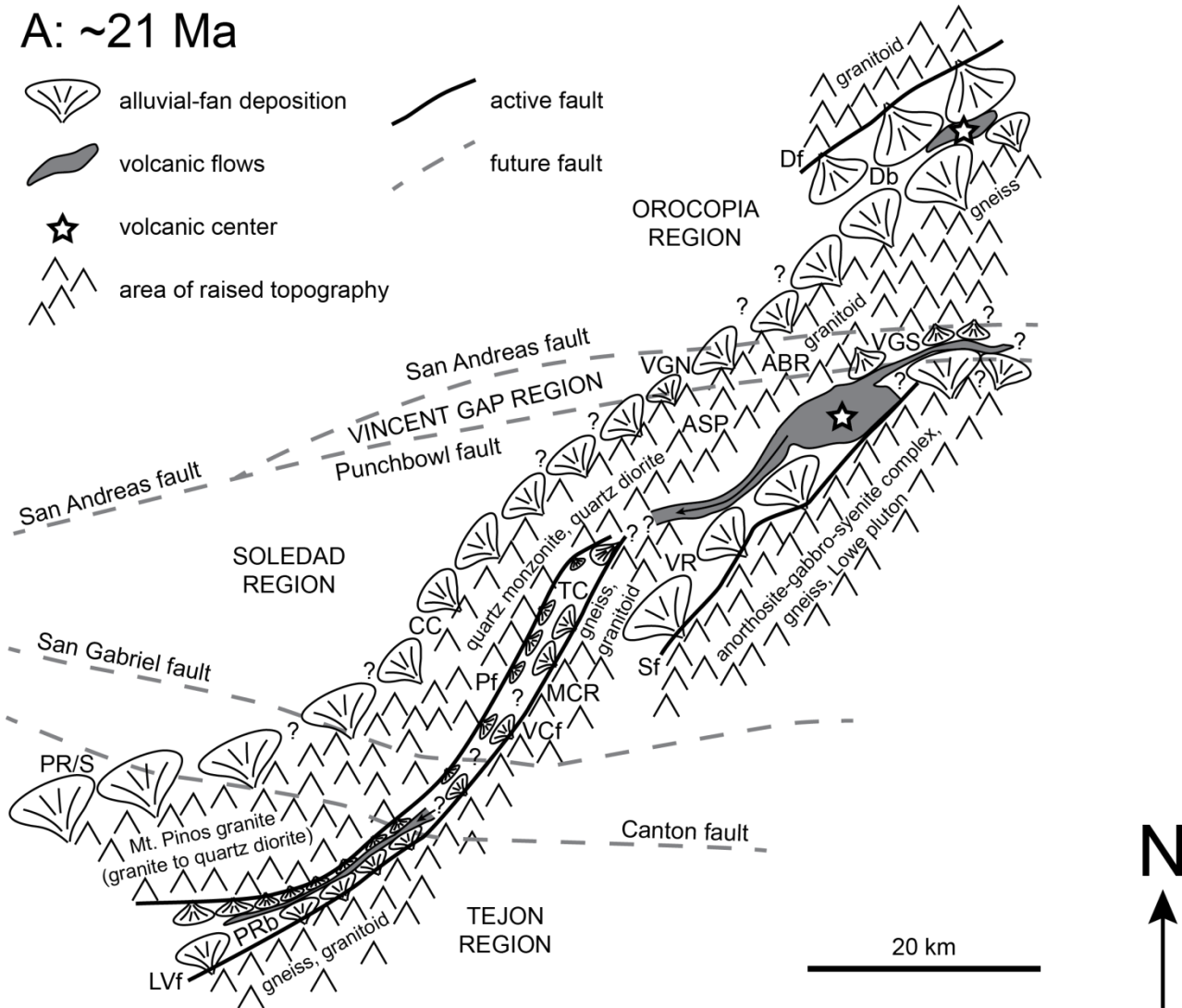
Geologic Map

PLATE 1: GEOLOGIC MAP OF THE VINCENT GAP REGION, EASTERN SAN GABRIEL MOUNTAINS, SOUTHERN CALIFORNIA, USA



Paleogeography

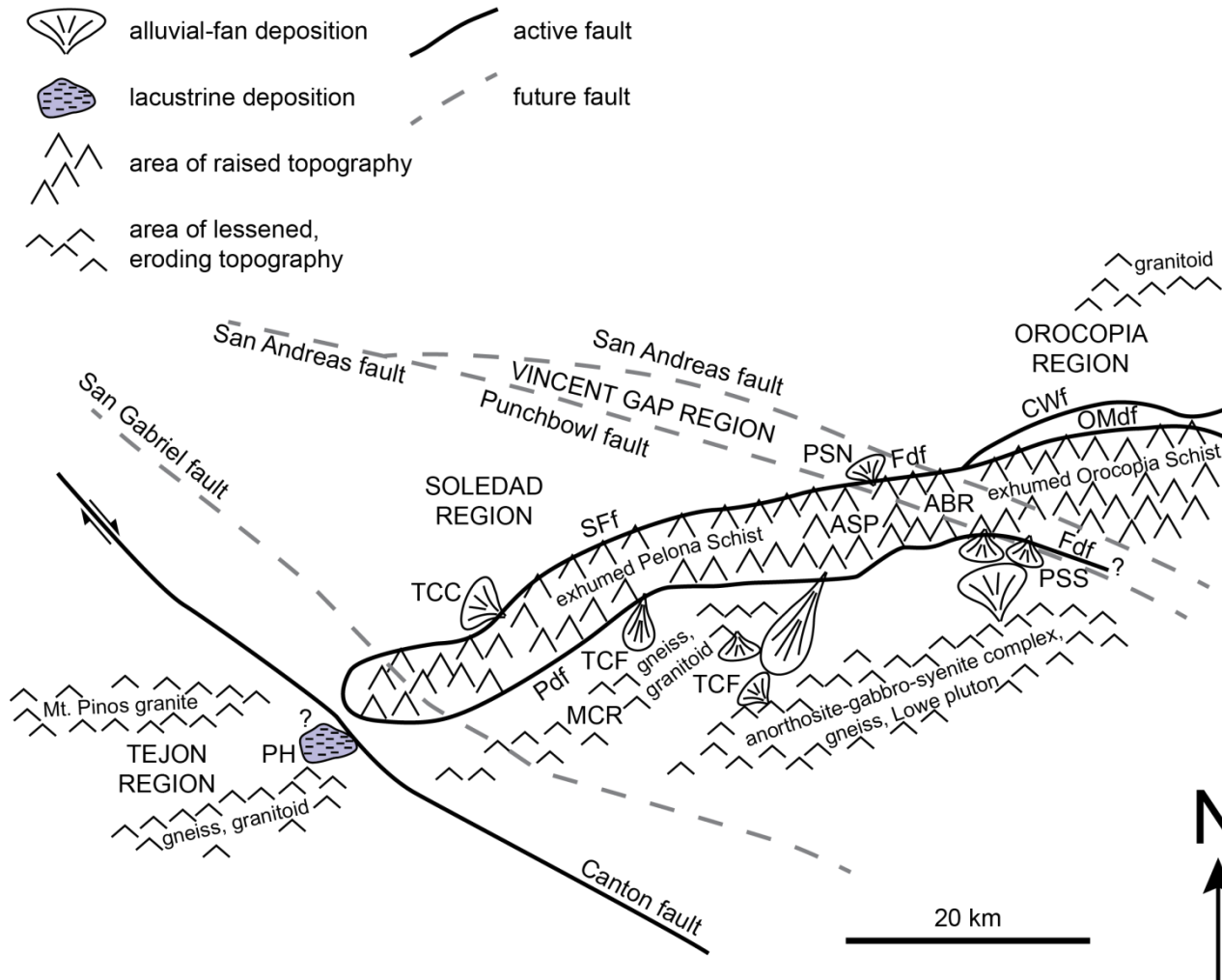
A: ~21 Ma



Details after Ingersoll et al. (2014) and ideas and references discussed in Coffey (2015)

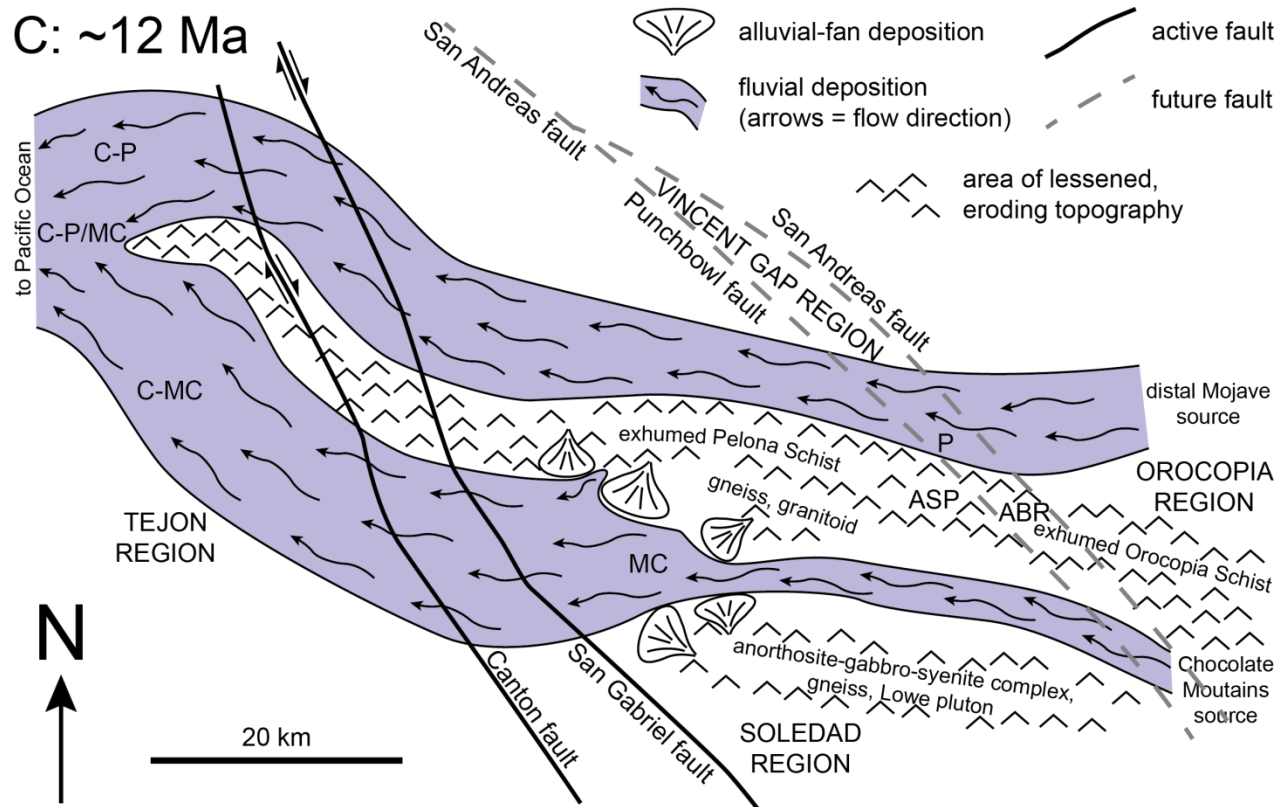
Paleogeography

B: ~15 Ma



Details after Ingersoll et al. (2014) and ideas and references discussed in Coffey (2015)

Paleogeography



Details after Ingersoll et al. (2014) and ideas and references discussed in Coffey (2015)

References

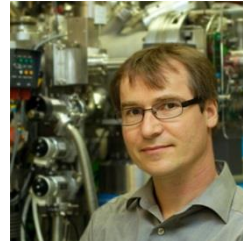
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Acknowledgments

UCLA



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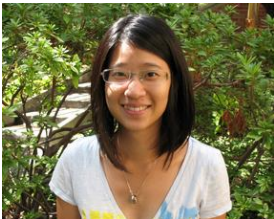
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Ballad of a Borderland

Microplates, snatched one, two, three
The effects, onshore, we see
Fragments of a plate now gone
The once mighty Farallon

First up, the Monterey plate
Rocks above, ye'll transrotate!
What to do with all this room?
But of course! The schists exhume

Catalina forms blue breccia
Pelona clasts too? Oh, you betcha
But if Vasquez's comment's wished
It's "I'm too old for all this schist!"

Magdalena's captured too
And with Guadalupe glued
To that big Pacific retch
Well, that's a bit of a stretch

But the tension does not hold
For the Pacific is so bold
As to claim Baja as well
The Big Bend forms; mountains swell

Now it is the present day
Much lies under Qoa
And an order's left, quite tall
We must reconstruct it all!