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

Figure after Frizzell and Wiegand (1993) and Law et al. (2001).
3 – Middle to Upper Miocene

Figure after Frizzell and Weigand (1993) and Law et al. (2001).
Study Area: The Vincent Gap Region

[Images of snowy landscape and signs with elevation information]
Methods

- Field mapping
- Conglomerate composition counts
- Paleocurrent indicator measurements
- Sandstone composition counts
- Detrital-zircon dating
- Igneous-zircon dating
- Volcanic trace-element analysis
PLATE 1: GEOLOGIC MAP OF THE VINCENT GAP REGION, EASTERN SAN GABRIEL MOUNTAINS, SOUTHERN CALIFORNIA, USA
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Paleogeography

A: ~21 Ma

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

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References


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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!”

Magdalina’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!