

A Fresh Look at the Geology of Mount Diablo

If you are looking for a lot of complicated geology within a small area, sign up for the Mount Diablo Field trip. The core of the mountain consists of a large fragment of oceanic crust (an ophiolite) and a chaotic mixture of chert, basalt and sandstone (the Franciscan Formation) that was scraped off of an oceanic plate during tens of millions of years of subduction. Tectonic compression during the Tertiary has uplifted these rocks and deformed the younger sedimentary formations that were originally deposited on the Franciscan Complex. Modern tectonics associated with the San Andreas fault system continue this uplift, resulting in the older rocks being on the top of the mountain and younger rocks on the flanks.

For this field trip, we will combine new data on geologic ages and underlying structures together with easily reached outcrops and satellite images to give fresh perspectives on this interesting example of coastal California geology. We will drive to the top of the mountain for a regional perspective, then proceed to look at sections of banded chert, altered deepwater basalts, and clastic sediments of the Franciscan Formation before ending the trip in Eocene deepwater sandstones derived from the Sierra Nevada range. The trip will include short walks on flat hard trails to access numerous outcrops.

This is a California State Park. No rock hammers. Rock, plant, or flower collecting is strictly prohibited. Cameras are encouraged. Layered field clothing is suggested. Be prepared for warm weather.