

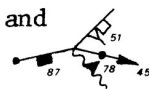
LITHOLOGIC UNITS

- ⊙ PVP - Mio-Pliocene Relief Peak Formation - andesitic mudflow breccia
- ⊙ MV^r - Oligo-Miocene Valley Springs Formation - rhyolite ash flows
- ⊙ gr - Granitoid rocks of the late Jurassic to late Cretaceous Sierra Nevada batholith and satellitic plutons of unknown age
- ⊙ gb - Gabbroic plutons of unknown (Mesozoic?) age
- ⊙ UPz - Upper Paleozoic to lower Mesozoic Calaveras Complex - argillite, chert-argillite, rhythmically bedded and massive chert, marble, talc-schist, rare basalt and sandstone layers
- ⊙ LPz - Lower Paleozoic Shoo Fly Complex - a heterogeneous assemblage of highly deformed lower amphibolite grade psammitic metasedimentary rocks and post-S₁ discordant metaplutonic rocks. The complex can be subdivided into the following lithologic units which are listed in order of decreasing map area:
 - ⊙ q massive to well-laminated orthoquartzite, mica-quartzite, and quartzofeldspathic gneiss
 - ⊙ ag granite, syenite, and gabbroic orthogneiss (augen gneiss)
 - ⊙ s mica-quartz schist
 - ⊙ c calc-silicate rock, marble, and marble schist+graphite
 - ⊙ a amphibolite

Lithologic descriptions of subunits of the Shoo Fly Complex can be found in appendix 1.

STRUCTURAL SYMBOLS

Structural symbols are defined for both the Calaveras Complex and the Shoo Fly Complex. Symbols are often mixed; the point of intersection is the observation point.




Upper Paleozoic Calaveras Complex

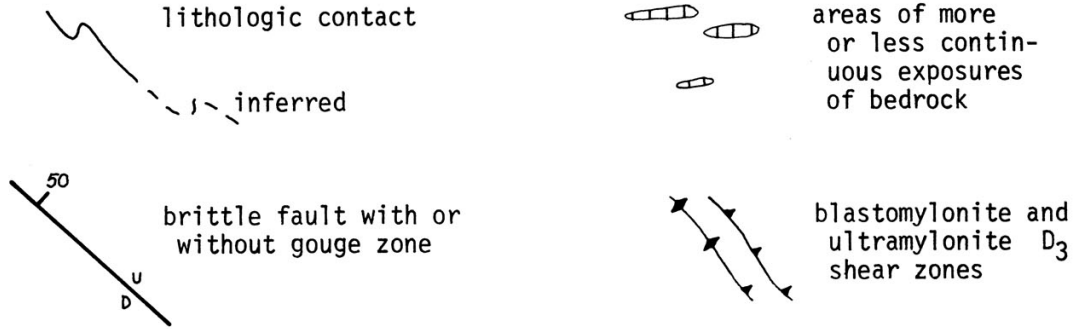
<ul style="list-style-type: none"> — S₀ ▲ S₁ ↗ F₁/L₁ ▲ S₂ ↗ F₂/L₂ 	<ul style="list-style-type: none"> Bedding Flattening foliation Fold axis/mineral streaking Slip cleavage and spaced biotite foliation Fold axis/crenulation axis or intersection lineation
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Lower Paleozoic Shoo Fly Complex

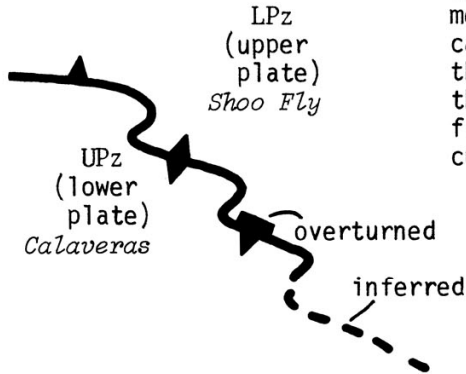
<ul style="list-style-type: none"> — S₀ ▲ S₁ ↗ F₁/L₁ ▲ S₂ ↗ F₂/L₂ ▲ S₃ ↗ F₃/L₃ ▲ S₄ ↗ F₄/L₄ ▲ S₅ ▲ S₆ ▲ S₇ — S_i 	<ul style="list-style-type: none"> Bedding defined by compositional layering indicates metasedimentary origin but extensively transposed in the study area Metamorphic layering or mica foliation related to rare F₁ isoclinal folds Fold axis/mineral streaking Penetrative lower amphibolite grade mica foliation related to F₂ isoclinal and rootless folds Fold axis/mineral streaking Blastomylonitic epidote-amphibolite facies foliation formed axial planar to F₃ isoclinal and rootless folds during formation of the Calaveras - Shoo Fly thrust. Shearing, boudinage, transposition and metamorphic overprinting of older fabric elements (S₁, S₂, etc.) is oblitative within 2 km of the ductile fault creating a wide zone of ductile shear deformation. Away from D₃ shear zones the S₃ foliation is domainal with mica recrystallized axial planar to isoclinal to tight folds Fold axis/elongation lineation Spaced schistosity or crenulation cleavage with biotite, muscovite, and quartz growth axial planar to tight to isoclinal folds Fold axis/crenulation or intersection lineation N32°W, 78°NE Nevadan cleavage axial planar to crenulate and open F₅ folds N30°E, 90° Late Nevadan cleavage axial planar to crenulate and open F₆ folds N70°W to E-W, 90° Cretaceous high angle fracture cleavage and local reverse faulting with quartz veining and mineralization. Open F₇ folds are observed, however, F₅, 6, 7 folds are generally not plotted on Plate 1 Igneous flow layering
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Foliation symbols are square  when axial planar to folds. Down-plunge fold asymmetries are shown.

LITHOLOGIC CONTACTS



Calaveras-Shoo Fly thrust - marked by blastomylonite and intense localized isoclinal and rootless F₃ folding accompanied by penetrative lower amphibolite grade metamorphic recrystallization. Due to severe imbrication and ductile transposition in the 1-2 km wide thrust zone, the trace of the thrust is a form-line that separates regions of ≥50% Calaveras lithologies from ≥50% Shoo Fly lithologies. Some larger disarticulated slivers on both sides of the fault are shown.



Geologic mapping by Charles Merguerian 1978-1981 (summers)

Declination = 17°E



Plate 1

Stanislaus	Crandall Peak
Columbia SE	Twain Harte

7½-minute quads.

Explanation to accompany Plate 1 (Merguerian, 1985ms)