

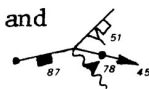
## LITHOLOGIC UNITS

- ⊙ PVP - Mio-Pliocene Relief Peak Formation - andesitic mudflow breccia
- ⊙ MV<sup>r</sup> - 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-S<sub>1</sub> 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

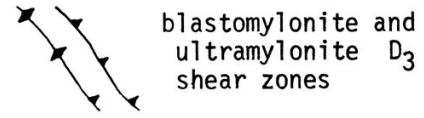
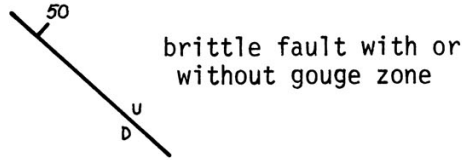
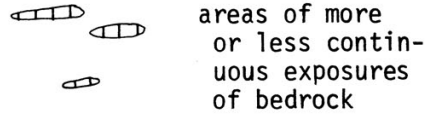
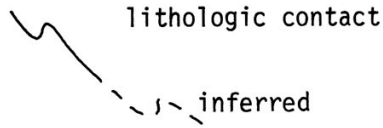
<ul style="list-style-type: none"> <li>— S<sub>0</sub></li> <li>▲ S<sub>1</sub></li> <li>↗ F<sub>1</sub>/L<sub>1</sub></li> <li>▲ S<sub>2</sub></li> <li>↗ F<sub>2</sub>/L<sub>2</sub></li> </ul>	<ul style="list-style-type: none"> <li>Bedding</li> <li>Flattening foliation</li> <li>Fold axis/mineral streaking</li> <li>Slip cleavage and spaced biotite foliation</li> <li>Fold axis/crenulation axis or intersection lineation</li> </ul>
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### Lower Paleozoic Shoo Fly Complex

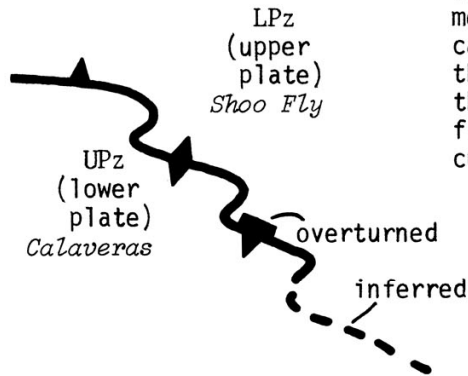
<ul style="list-style-type: none"> <li>— S<sub>0</sub></li> <li>▲ S<sub>1</sub></li> <li>↗ F<sub>1</sub>/L<sub>1</sub></li> <li>▲ S<sub>2</sub></li> <li>↗ F<sub>2</sub>/L<sub>2</sub></li> <li>▲ S<sub>3</sub></li> <li>↗ F<sub>3</sub>/L<sub>3</sub></li> <li>▲ S<sub>4</sub></li> <li>↗ F<sub>4</sub>/L<sub>4</sub></li> <li>▲ S<sub>5</sub></li> <li>▲ S<sub>6</sub></li> <li>▲ S<sub>7</sub></li> <li>— S<sub>i</sub></li> </ul>	<ul style="list-style-type: none"> <li>Bedding defined by compositional layering indicates metasedimentary origin but extensively transposed in the study area</li> <li>Metamorphic layering or mica foliation related to rare F<sub>1</sub> isoclinal folds</li> <li>Fold axis/mineral streaking</li> <li>Penetrative lower amphibolite grade mica foliation related to F<sub>2</sub> isoclinal and rootless folds</li> <li>Fold axis/mineral streaking</li> <li>Blastomylonitic epidote-amphibolite facies foliation formed axial planar to F<sub>3</sub> isoclinal and rootless folds during formation of the Calaveras - Shoo Fly thrust. Shearing, boudinage, transposition and metamorphic overprinting of older fabric elements (S<sub>1</sub>, S<sub>2</sub>, etc.) is oblitative within 2 km of the ductile fault creating a wide zone of ductile shear deformation. Away from D<sub>3</sub> shear zones the S<sub>3</sub> foliation is domainal with mica recrystallized axial planar to isoclinal to tight folds</li> <li>Fold axis/elongation lineation</li> <li>Spaced schistosity or crenulation cleavage with biotite, muscovite, and quartz growth axial planar to tight to isoclinal folds</li> <li>Fold axis/crenulation or intersection lineation</li> <li>N32°W, 78°NE Nevadan cleavage axial planar to crenulate and open F<sub>5</sub> folds</li> <li>N30°E, 90° Late Nevadan cleavage axial planar to crenulate and open F<sub>6</sub> folds</li> <li>N70°W to E-W, 90° Cretaceous high angle fracture cleavage and local reverse faulting with quartz veining and mineralization. Open F<sub>7</sub> folds are observed, however, F<sub>5</sub>, 6, 7 folds are generally not plotted on Plate 1</li> <li>Igneous flow layering</li> </ul>
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Foliation symbols are square  when axial planar to folds. Down-plunge fold asymmetries are shown.

LITHOLOGIC CONTACTS

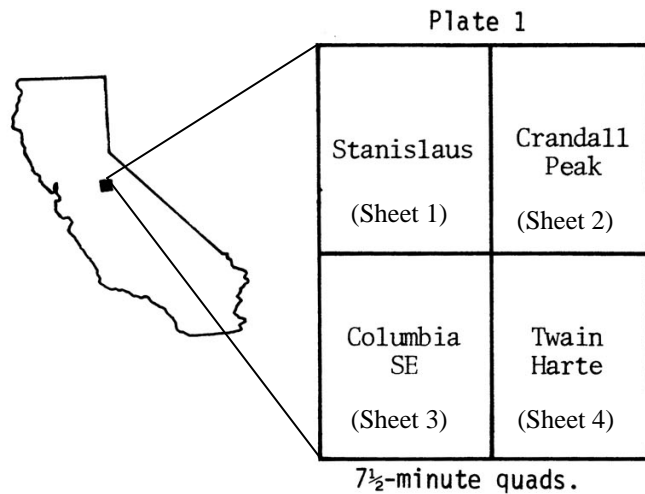


Calaveras-Shoo Fly thrust - marked by blastomylonite and intense localized isoclinal and rootless  $F_3$  folding accompanied by penetrative lower amphibolite grade metamorphic recrystallization. Due to severe imbrication and ductile transposition in the 1-2 km wide thrust zone, the trace of the thrust is a form-line that separates regions of  $\geq 50\%$  Calaveras lithologies from  $\geq 50\%$  Shoo Fly lithologies. Some larger disarticulated slivers on both sides of the fault are shown.



Geologic mapping by Charles Merguerian 1978-1981 (summers)

Declination =  $17^\circ E$



Explanation to accompany Plate 1 (Merguerian, 1985)

Geological mapping by Charles Merguerian, 1978-1981 (summers)

Some contacts from: Schweickert, R.A. (unpublished data)

Wagner, D.L., Jennings, C.W., Bedrossian, T.L., and Bortugno, E.J., 1981, Geologic map of the Sacramento Quadrangle: California Division of Mines and Geology, Regional Geologic Map Series Map No. 1A, Scale 1:250,000.