

PLATE 1 - Geological Map of the Jupiter Area, Stanislaus Drainage, Tuolumne Co., California

(Encompassing parts of the Stanislaus, Crandall Peak, Columbia SE, and Twain Harte quadrangles)



- LITHOLOGIC UNITS**
- Pv^p Mio-Pliocene Relief Peak Formation - andesitic mudflow breccia
 - Mv^p 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
 - UP₂ Upper Paleozoic to lower Mesozoic Calaveras Complex - argillite, chert-argillite, rhythmically bedded and massive chert, marble, talc-schist, rare basalt and sandstone layers
 - LP₂ Lower Paleozoic Shoo Fly Complex - a heterogeneous assemblage of highly deformed lower amphibolite grade isomictic metasedimentary rocks and post-S₃ discordant metaplutonic rocks. The complex can be subdivided into the following lithologic units which are listed in order of decreasing map area:
 - 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**
- S₀ Bedding
 - S₁ Flattening foliation
 - F₁/L₁ Fold axial/mineral streaking
 - S₂ Slip cleavage and spaced biotite foliation
 - F₂/L₂ Fold axis/crenulation axis or intersection lineation

- Lower Paleozoic Shoo Fly Complex**
- S₀ Bedding defined by compositional layering indicates metasedimentary origin but extensively transposed in the study area
 - S₁ Metamorphic layering or mica foliation related to rare F₁ isoclinal folds
 - F₁/L₁ Fold axis/mineral streaking
 - S₂ Penetrative lower amphibolite grade mica foliation related to F₂ isoclinal and rootless folds
 - F₂/L₂ Fold axis/mineral streaking
 - S₃ Blastomylonitic epidote-amphibolite facies foliation formed axial planar to F₂ isoclinal and rootless folds during formation of the Calaveras - Shoo Fly thrust. Shearing, bounding, transposition and metamorphic overprinting of older fabric elements (S₁, S₂, etc.) is obliterative within 2 km of the ductile fault creating a wide zone of ductile shear deformation. Away from D₃ shear zones the S₃ foliation is dominal with mica recrystallized axial planar to isoclinal to tight folds
 - F₃/L₃ Fold axis/elongation lineation
 - S₄ Spaced schistosity or crenulation cleavage with biotite, muscovite, and quartz growth axial planar to tight to isoclinal folds
 - F₄/L₄ Fold axis/crenulation or intersection lineation N32°W, 78°NE Nevada cleavage axial planar to crenulation and open F₂ folds
 - S₅ Late and open F₂ folds
 - S₆ N30°E, 90° Late Nevada cleavage axial planar to crenulate and open F₂ folds
 - S₇ N70°W to E-W, 90° Cretaceous high angle fracture cleavage and local reverse faulting with quartz veining and mineralization. Open F₂ folds are observed, however, F₂, 6, 7 folds are generally not plotted on Plate 1. 6, 7 folds are generally not plotted on Plate 1. 6, 7 folds are generally not plotted on Plate 1.
 - S₁ Igneous flow layering

- Foliation symbols are square when axial planar to folds. Down-plunge fold asymmetries are shown.
- LITHOLOGIC CONTACTS**
- Inferred lithologic contact
 - Inferred brittle fault with or without gouge zone
 - Inferred areas of more or less continuous exposure of bedrock
 - Blastoconglomerate and ultramylonite shear zones
- Calaveras-Shoo Fly thrust - marked by blastomylonite and intense localized isoclinal and rootless F₂ folding accompanied by penetrative lower amphibolite grade calcite and ductile transposition in the 1-2 km wide thrust zone, the trace of the thrust is a fault line that separates regions of 2000 Calaveras lithologies from 2000 Shoo Fly lithologies. Some larger disarticulated silvers on both sides of the fault are shown.
- Declination = 17°E

Mapped, edited, and published by the Geological Survey
 Control by USGS and NOS/NOAA
 Topography by photogrammetric methods from aerial photography taken 1973. Field checked 1978.
 Map revised 1979
 Projection used 10,000-foot grid (California coordinate system, zone 3, Lambert conformal conic)
 1000-meter Universal Transverse Mercator grid, zone 10 1983 North American Datum
 To place on the predicted North American Datum 1983 move the projection lines 12 meters north and 98 meters east as shown by dashed corner ticks
 There may be private staking within the boundaries of the National or State Reservations shown on this map.

SCALE 1:24,000
 CONTOUR INTERVAL 40 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION
 Primary highway, hard surface
 Secondary highway, hard surface
 Light-duty road, hard or improved surface
 Unimproved road
 Interstate Route
 U.S. Route
 State Route

QUADRANGLE LOCATION

Geological Mapping by Charles Merguerian 1978-1981 (summers)