

Merguerian, Charles, Bogen, N. L.; and Schweickert, R. A., 1983b, Tectonostratigraphic units in a transect across the central Sierra Nevada, California.

Bedrock mapping in the central Sierra Nevada foothills between the Great valley and the Sierra Nevada batholith has delineated three ductile-fault -bounded tectonostratigraphic units. West of the batholith, the LPz Shoo Fly Complex (Unit 1) is an amphibolite grade sequence of quartzite, quartzofeldspathic gneiss, garnet schist, granite and syenite augen gneiss, calc-silicate and marble. Unit 1 is in blastomylonitic thrust contact with the upper Pz to lower Mz Calaveras Complex (Unit 2). Lithology and two superposed isoclinal folding episodes (D_1 , D_2) in Unit 1 are truncated and deformed (D_3) along the pre-Jurassic Calaveras-Shoo Fly thrust (CSFT). Unit 2 is a chaotic assemblage of argillite, chert, marble, talc schist, basalt and rare sandstone layers. An intense flattening foliation (S_1) formed during juxtaposition with Unit 1. E-W trending, E-plunging, tight, asymmetric folds deform the CSFT with an axial-planar slip cleavage or spaced mica schistosity forming in both Unit 1 (S_4) and Unit 2 (S_2). Post-tectonic upper Jurassic granitoids and mafic dikes intrude Units 1, 2, the CSFT and post-date the E-W cleavage. Unit 3 lies west of the Sonora fault (SF) and consists of upper Jurassic flysch and lower - upper Jurassic arc volcanic rocks resting on pre-late Jurassic ocean crust, serpentinite, and melange. These rocks were tightly folded and metamorphosed to lowest greenschist facies during the late Jurassic Nevadan orogeny. Units 1 and 2 developed crenulation and fracture cleavages at this time. Two major NW-trending anticlines in Unit 3 expose the volcanic rocks beneath the flysch. Similar, coeval rocks between the Melones fault (MF) and SF bear phyllitic cleavage and are of higher metamorphic grade (actinolite-stilpnomelane) than the rest of Unit 3. This transect reveals an eastward increase in age, metamorphic grade and structural complexity of the units with abrupt transitions at the MF, SF, and CSFT.

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