Schweickert, R. A.; Bogen, N. L.; Girty, G. H.; Hanson, R. E.; and Merguerian, Charles, 1983, Timing and structural expression of the Nevadan Orogeny, Sierra Nevada, California.

Structures formed during the Nevadan orogeny (NO) occur in all three major lithotectonic belts in the Sierra Nevada. Key age constraints on these structures in the 3 belts indicate an older age than generally accepted for the Kimmeridgian Stage, and suggest that, within limits of uncertainty of published K-Ar, U-Pb, and faunal ages, the NO occurred during Kimmeridgian time, between about 158 and 153 m.y.a. The western belt (WB) consists of Jurassic volcanic and sedimentary rocks of island-arc affinity. The central belt (CB) is made up of several Paleozoic sequences that formed a structural basement to rocks of the eastern belt (EB). The EB consists of Triassic and Jurassic volcanic and sedimentary rocks of a continental margin-type arc. Nevadan structures in the 3 belts vary markedly in style, but NW-orientations are the rule. Basement rocks in the southern part of the CB contained polyphase, pre-NO structural fabrics, and during the NO only developed domainal, spaced and crenulation cleavages and open folds. To W, N, and E of these basement rocks, all Jurassic and older rocks developed widespread slaty cleavages and were tightly folded. WB rocks also developed internal thrusts and were thrust beneath CB rocks. Late-phase NE- trending crenulations occur in all 3 belts. Explanations for the NO must account for the following: 1) duration <5 m.y.; 2) major ENE-WSW shortening occurred over a large region with thrusting along NNW- trending tectonic boundaries; 3) the NO was the first intense regional deformational/metamorphic event shared by all pre-Cretaceous rocks of the Sierra Nevada.

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