GEOLOGIC MAPPING IN NORTHERN SAND SPRINGS RANGE AND SOUTHERN STILLWATER RANGE, NEVADA LEADS TO A NEW SEQUENCE OF EVENTS

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Detailed geologic mapping of northern Sand Springs Range and southern Stillwater Range reveals that the metamorphic foliation predates adjacent Cretaceous plutons and that Cenozoic faults do not greatly reorient Mesozoic structures. Project objectives are to produce a 1:8000-scale geologic map and to work out a sequence of events. The 40 km^2 project area is located in western Nevada 80 miles east of Reno within the Great Basin. The map features Triassic-Jurassic rocks deposited in the Mesozoic Marine Province, a back-arc basin east of the Sierra Nevada, Cretaceous granitoids, and Tertiary igneous rocks.

Techniques applied include: walking out contacts, interpreting aerial photographs, measuring orientations of bedding, primary igneous foliations, metamorphic foliations, and fault surfaces, and constructing cross-sections. Map units were distinguished by describing outcrops, hand samples, and thin-sections. Fold orientations and paleo-stress directions were interpreted from data on stereonets.

Resultant map requires a sequence of events different from published work:

1. Four Jurassic-Triassic sedimentary and intrusive units deposited and intruded in Mesozoic Marine Province.
2. Sierra Nevada folding and regional metamorphism (D1) created (S1) foliation.
3. Luning-Fencemaker thrust belt folding and thrust faulting (D2, D3) deformed metamorphic tectonites.
4. Cretaceous granitoids intruded and cross-cut D1 structures. Evidence supporting includes: pluton cross-cuts map-scale D1 folds and primary igneous foliation not parallel to S1.
5. Granitoid and tectonites uplifted and eroded.
6. Seven Tertiary volcanic units deposited.
7. Five Tertiary intrusive units crosscut Ter-

tiary and older rocks.
8. Early Basin and Range and Walker Lane faulting.
9. Quaternary older alluvium (Qoa) deposited.
10. Holocene Basin and Range and Walker Lane normal and strike-slip faulting.

Work supported by a Southwest Section AAPG grant.