1. The arc accretion model for evolution of southern Laurentian crust has been prevalent for the last 20 years. Recent structural and seismic studies have been interpreted in terms of this model, identifying dipping reflectors as fossil subduction zones.

2. But, Paleoproterozoic rocks of the southwest are dominantly bimodal basalt-rhyolite assemblages. Andesite and basaltic andesite, major components of modern island arcs, are almost entirely absent, as are ophiolites, accretionary melanges, and other arc-related features.

3. Trace element data for felsites from Gunnison-Salida area compare favorably with similar data for rhyolites from the Kenya Rift.

4. Inherited zircons and Nd data from bimodal rocks in the Gunnison-Salida area of Colorado indicate derivation from older, ca. 1850 Ma Trans-Hudson/Penokean (THO/P) rocks. The occurrence of the 1840 Ma Elves Chasm pluton in the Grand Canyon (Hawkins et al., 1996) confirms that rocks of THO/P age are present in southern Laurentia.

5. These data suggest that arc accretion occurred ca. 1850 Ma and that subsequent, ca. 1750-1710 Ma rifting of the accreted basement produced the observed bimodal volcanic sequences. This proposal is consistent with the suggestion of Selverstone et al. (2000) that the Proterozoic lithosphere, at least in Colorado, may have been assembled piecemeal along major transcurrent shear zones.