

## Poster 6      Preliminary Tectonic Map of Oklahoma

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A tectonic map of Oklahoma has not been published in nearly 50 years. Small-scale maps in the public domain typically do not adequately represent either the structural style, or the depth of adjacent sedimentary basins.

Oklahoma includes parts of three contrasting tectonic domains; a stable dome and platform in the northeast; an imbricate thrust system in the southeast; and high-angle reverse fault-dominated structures in central, southwestern and western Oklahoma.

The Ozark dome has a history of rejuvenation culminating in Pennsylvanian time. The uplift and the adjacent Cherokee platform have apparently been stable since Late Pennsylvanian time.

The Ouachita uplift and Arkoma basin in southeastern Oklahoma are parts of a regional low-angle thrust system of Late Mississippian and Pennsylvanian ages. Basement is probably involved, but occurs at depth to the south, and is poorly known.

Structures in central, southwestern, and far northwestern Oklahoma are coincident with the growth of the Ancestral Rocky Mountains, and as such are characterized as essentially vertical, basement-rooted uplifts. The major structures are the Wichita, Criner, and Arbuckle uplifts in southern and southwestern Oklahoma; the Nemaha uplift and fault zone in central Oklahoma; and the Cimarron arch in the Oklahoma panhandle.

The latter structures are transpressional in origin, although the major component of movement on the faults is commonly dip-slip in nature. The Wichita Mountains are apparently uplifted along lines of weakness inherited from Late Precambrian or Cambrian time; however, uplift occurred in Pennsylvanian and Early Permian time. The smaller structures also date to that major period of uplift. The contrasting styles and geographic orientations of the Ouachita and Arbuckle-Wichita systems continue to be enigmatic.