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Structural Styles in the Ouachita Mountains
and Southern Arkoma basin, Arkansas

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Abstract: This display represents a variety of geologic maps of the Ouachita Mountains/southern Arkoma Basin, Arkansas. These maps largely were made through an intensive 5 ½ year field and aerial photographic project – COGEOMAP, a cooperative venture with the Oklahoma Geological Survey and the U.S. Geological Survey designed to generate geologic maps and reports providing information on the complex structure, stratigraphy and mineral resources in the Ouachita Mountain orogen. To date, in Arkansas, 151 geologic maps have been completed at a scale of 1:24,000 and then reduced and compiled at scales of 1:100,000 and 1:250,000. The remaining 26 maps currently are being field checked or are in various stages of preparation. Biostratigraphic evaluation of the early Paleozoic strata also has been very important and included evaluations by Ray Ethington, Jim Stitt, John Repetski and others.

A few geological features that are newly illustrated include: (1) décollements in middle Stanley shales between Potter and Hatfield in Polk County and near Gillham Dam in Howard County; (2) the duplex, triangle, or “tepee” nature of the structure in Atokan rocks along Dutch Creek in Scott and Yell Counties; (3) extensive belts of Lower Ordovician and Early Cambrian strata in Garland and Saline Counties of the eastern Benton uplift; (4) several additional tear and thrust faults in the vicinity of Amity in Pike and Montgomery Counties; (5) exposures of Jackfork Sandstone in the Mazarn basin southwest of Hot Springs in Garland County; and (6) lineaments trending northwest and northeast at several sites in western Polk and Howard Counties.