

## **Mesozoic Tectonics of the Northwest Ordos Region: Deformation around the Margins of an Intracontinental Basin**

By

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The oil and gas producing Ordos basin, located ~450-750 km west of Beijing is a dominant feature in the tectonic landscape of Asia. Situated in the middle of the North China craton, the Ordos basin remained relatively stable while its margins were subjected to intense deformation as Asia was being amalgamated. Surrounding the Ordos basin are Mesozoic, intraplate orogenic belts, which include the east-trending Yinshan belt along the northern margin, the north-trending Taihang Shan to the east, the east-trending Qinling belt along the southern margin, the north-trending Western Ordos fold-thrust belt to the west, and the northeast-trending Lang Shan to the northwest. Most of these belts, with the exception of the Yinshan belt, are poorly understood and lack a detailed understanding of the geometry, timing, and kinematics of deformation. Furthermore, these orogenic belts were far from contemporaneous plate boundaries.

This study seeks to: 1) better understand the complex geometry, kinematics, and timing of the Mesozoic Western Ordos fold-thrust belt and the Lang Shan; 2) discern controls on the diverse style(s) of intracontinental deformation in this region; 3) explore relationships between the Western Ordos, Lang Shan, and Yinshan belts and the strain resistant Ordos basin; and 4) decipher the relationship(s), if any, of these bordering orogens to Asian plate boundaries active at the time of deformation. In order to accomplish these research objectives, geologic mapping will be accompanied by cross-section construction, analysis of relations between structures and stratigraphic units, and incorporation of geochronologic data into tectonic models.