

## **Stratigraphy and Structure of the Oiyug Basin, South-Central Tibet**

By

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A notable aspect of the Tibetan Plateau is the presence of extensional features which have generally been associated with development of the Himalayan orogen to the south. Models to explain the extension include gravitational spreading of thickened Tibetan crust, convective removal of underlying lithospheric mantle, extension related to the kinematics of India/Asia collision, and regional boundary forces generated by mantle/lithosphere interactions. These differing hypotheses have important implications towards our understanding of the relationships between extension, mantle/lithosphere dynamics, and plateau uplift in convergent settings. The validity and significance of the competing hypotheses are highly dependent on the timing of initial extension across the Plateau, however, few studies have used the depositional age of extensional basin strata to constrain the timing of extension in southern Tibet.

The Oiyug Basin covers ~100 square kilometers and is filled with ~3 kilometers of Paleocene to Pliocene sedimentary and volcanic strata. Although deeply dissected, the basin stratigraphy is poorly constrained, and the structural controls on basin development, the geometry and kinematics of the basin-bounding fault zone, and the age of the oldest rift-related strata are unknown. Given the age of the strata and possible rift-related origin, development of the Oiyug basin may record the initiation of extension in the Tibetan Plateau. Reconstruction of basin deposystems, and the determination of the orientation and kinematics of bounding faults will help to better temporally constrain the initiation of extension across the southern Tibetan Plateau.