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**Structural Controls on Stratigraphic Architecture in Extensional Basins Above the Early Cretaceous Hohhot Detachment, Inner Mongolia, China**

Lower Cretaceous supradetachment basins above the Hohhot detachment provide an opportunity to examine sedimentation associated with detachment faulting and metamorphic core complex formation. A three-part stratigraphy has been established for the basins in this area. The lower two units, K1a and K1b, were deposited by sediment gravity flows and traction in aqueous flows. K1a also contains volcanic flows and reworked volcanoclastic deposits. K1c strata were deposited by sheetflood and channelized alluvial processes with paleocurrent and provenance data indicating transverse flow away from the uplifted footwall. Large gravity-driven slide blocks are commonly associated with K1b and K1c deposits, with the largest blocks (>1 km laterally) deposited within K1c strata.

Basins preserved on both the northern and southern flanks of the Hohhot metamorphic core complex contain K1a and K1b strata that record initial filling of the basin during early extensional break-up of the upper plate. K1c deposition on the north side of the Daqing Shan antiform was short-lived because isostatic uplift of the core complex separated the previously contiguous basins. Folding of the detachment deactivated the segment to the north resulting in much thicker K1c deposits to the south (>1000m) due to continued movement on successive splays of the Hohhot detachment (Davis et al. 2002) and concomitant subsidence. These results support the supradetachment basin end-member model promulgated by Friedmann and Burbank (1995), and further suggest that a variety of sedimentary styles may be seen in response to detachment faulting, depending on basin position relative to the fault and resultant crustal domes.