T13C-0225 Dynamics of Continental Rifting in Southern Tibet: Interpretations from Spatiotemporal Trends in Thermochronology Data

Monday, 11 December 2023

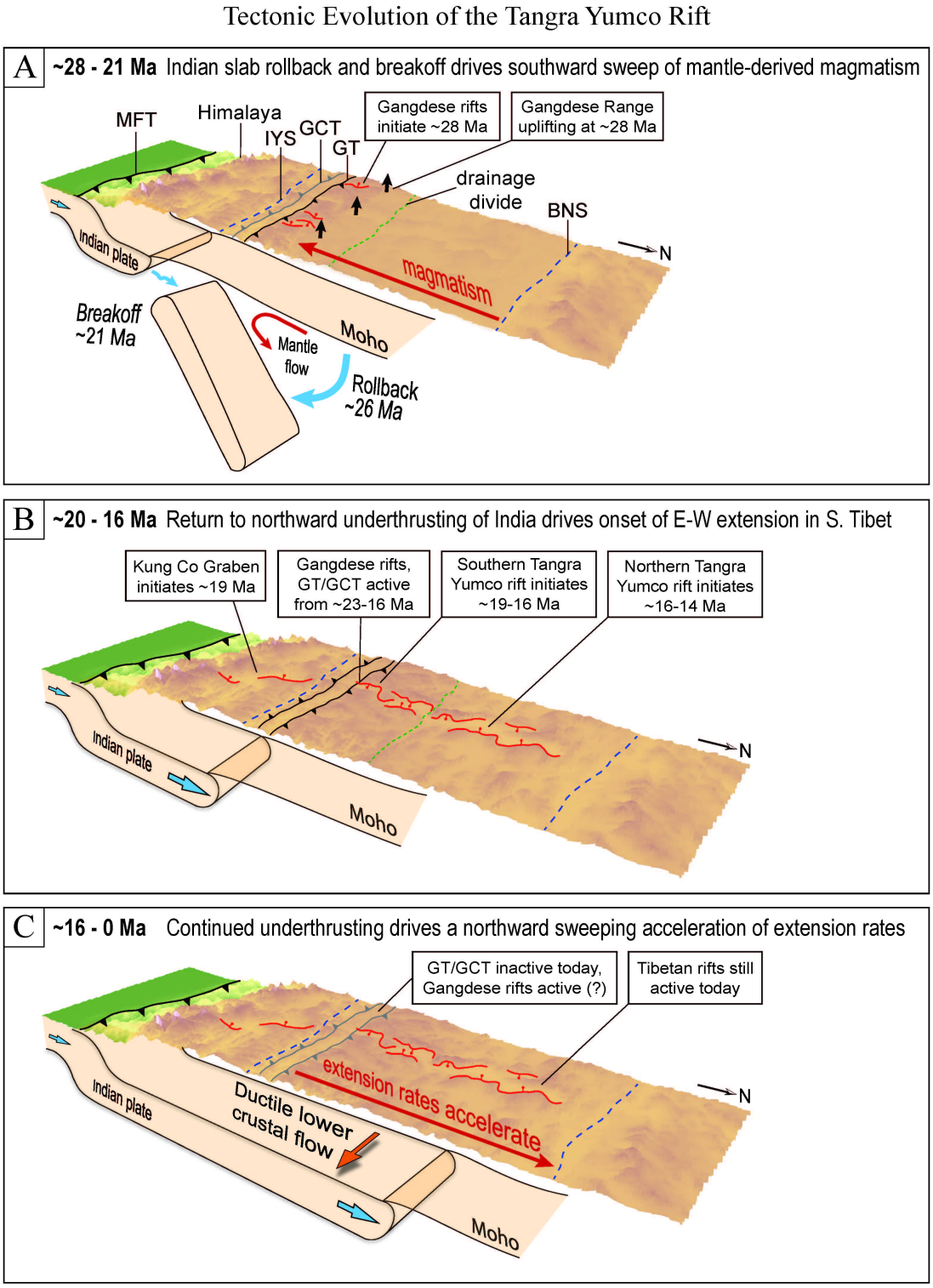
15:10 - 19:30

Poster Hall A-C - South (Exhibition Level, South, MC)

Abstract

Evaluating spatial and temporal patterns of rifting is an essential step towards disentangling the complex tectonic evolution of southern Tibet from Oligocene to Miocene time. Here we examine spatial trends in thermochronology data for two classes of rifts: Tibetan rifts that are generally >150 km in length and crosscut the Lhasa Terrane, and Gangdese rifts that are typically <50 km long and isolated within the high topography of the Gangdese Range. Analysis of compiled ZHe data from two Tibetan rifts and three Gangdese rifts suggests initiation along Tibetan rifts occurred between ~19-14 Ma, consistent with previous studies that interpret a northward sweep of extension onset related to northward underthrusting of the Indian plate. Conversely, results indicate Gangdese rift initiation at around ~28 Ma, prior to the recent episode of India underthrusting beginning at ~20 Ma. We suggest Gangdese rift initiation was driven by exhumation and uplift of the Gangdese Range, with ZHe ages overlapping timing estimates for contraction along the Great Counter Thrust from ~28-16 Ma. These results suggest the interactions and feedbacks between contractional and extensional structures in southern

Tibet are more complex than previously recognized.



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