

## SEDIMENTARY BASIN DEVELOPMENT ABSTRACTS

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### Structure and Origin of South China Basin

The southern margin of China and the northern margin of Reed Bank and associated blocks represent the boundary between normal oceanic crust and subsided transitional crust that has been rifted, thinned, and perhaps intruded by igneous rocks. The intervening South China Sea basin is composed of two subbasins. The eastern basin was demonstrably formed by approximately north-south sea-floor spreading in the middle Tertiary.

The western basin of the South China Sea is characterized by northeast-southwest tectonic trends and is much narrower than the eastern basin. Any plausible reconstruction of the eastern subbasin to its pre-drift configuration creates a large overlap of the inferred zones of transitional crust bordering the western subbasin. Because there is no obvious structural discontinuity in the deep-water parts of the two subbasins, one can hypothesize that the eastern basin opening was initially accommodated in the west by anomalously large continental crustal stretching. The fault-bounded microcontinental blocks that occupy much of the margins of the western basin are believed to be underlain by transitional crust of intermediate thickness and composition. The geometry of the deep basin as defined by the seaward limit of the continent-ocean boundary (COB) zone provides constraints on the east-to-west variations in crustal stretching of both the northern and southern rifted margins of the South China Sea. Although the southwest subbasin was also formed by sea-floor spreading processes, the processes were active only during the late phase of spreading in the east. Either the southwest subbasin spread obliquely, or the late spreading phase changed from a north-south trend to northwest-southeast.