

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

Harry E Cook¹, Dmitriy V Alexeiev², Alexander V Mikolaichuk³, Alexandra Djenchuraeva⁴, James J Corboy¹ (1) U.S. Geological Survey, Menlo Park, CA (2) Institute of Oceanology, Moscow, Russia (3) International Scientific Research Center, Bishkek, Kyrgyzstan (4) GosComgeologii of Kyrgyzstan, Bishkek, Kyrgyzstan

Development of an Isolated Carbonate Platform from an Underlying Attached Platform: A Newly Discovered Devonian-Carboniferous Carbonate Platform in the Tian Shan Mountains of Kyrgyzstan

Studies in Kyrgyzstan provide new data on the tectonostratigraphic evolution of a thick, heretofore unknown, isolated carbonate platform that is time-equivalent with isolated, oil-rich carbonate platforms in the North Caspian Basin (e.g., Tengiz, Karachaganak, and Kashagan).

Preliminary field studies of this carbonate platform show that: 1) a 4,500 m-thick platform evolved stratigraphically upward from a 1,000 m-thick attached carbonate platform in the Famennian-Early Tournaisian into a 3,500 m-thick isolated carbonate platform in the Late Tournaisian-Bashkirian; 2) extensional normal faulting probably caused the isolation of the carbonate platform in the Late Tournaisian; 3) reef and grainstone-rimmed platform margins occur in the Late Devonian; ramps with skeletal mud mounds appear in the Tournaisian-Lower Visean; and platforms with grainstone-rimmed margins and slopes with massive skeletal mud mounds characterize the Middle Visean-Bashkirian; 4) platform interiors are comprised mainly of lower energy facies in the Famennian-Lower Visean and of higher energy ooid-bioclastic facies in the Middle Visean-Bashkirian; and 5) major, relative rises of sea-level observed in the Bolshoi Karatau carbonate platform 600 km northwest in Kazakhstan occur in coeval Kyrgyzstan platform facies. These data suggest that the observed relative sea-level events may have a common or related origin over wide areas including the North Caspian Basin.

Future studies will focus on establishing the platform-margin to slope to basin architecture and reservoir facies distribution within isolated carbonate platform and slope facies. New data and models will provide valuable tools for better understanding platform architecture and reservoir characteristics critical for developing North Caspian Basin carbonate oil and gas fields.