Monday, May 18, 2015

HGS Joint International and North American Dinner Meeting

Westchase Hilton • 9999 Westheimer
Social Hour 5:30–6:30 p.m.
Dinner 6:30–7:30 p.m.

Cost: $45 Preregistered members; $50 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.
Pre-registration without payment will not be accepted.
Walk-ups may pay at the door if extra seats are available.

Peter Bartok
University of Houston, Dept. Earth and Atmospheric Sciences
Bartok Inc.
María Carolina Mejía-Hernández and Murad Hasan
University of Houston, Dept. Earth and Atmospheric Sciences

Paleogeographic Constraints on Middle to Late Jurassic Tectonic Reconstruction of the Maya Block of Southern Mexico and Equivalent Strata of Northwestern South America

The paleogeography of the early drift phase along the southern margin of the Gulf of Mexico (Middle to Upper Jurassic) remains problematic. The present study focuses on the relationship between the Maya block of southern Mexico and its Jurassic paleo-neighboring northwestern South America geologic setting. Most published works have relied on paleomagnetic data rather than detailed correlations between the sedimentary rocks of the two regions, their similar age and lineaments of the major Mesozoic rifts. The emphasis of this study is on the Kimmeridgian and Tithonian due to their economic importance. The early rifts of the southern Mexico Maya Block and Guatemala Rubelsanto Trough are most likely related to the Triassic back-arc spreading of central Mexico and genetically related to the back-arc basin of the Magdalena Rift which includes the Cocinas Trough of the Guajira Peninsula, Colombia. As a consequence of the Yucatan rotation during the Early Jurassic the Akal Horst of the Reforma region aligns with the Cocinas Trough, resulting in similar Kimmeridgean paleogeographies for both. Their similar Kimmeridgian ammonites reported by Renz (1960) from the Cocinas Group of the Guajira and the co-eval ammonites of southern Mexico confirm their age equivalence. The role played by the Chiapas Block is discussed and it is considered to have been a later addition to the Maya Block. Previous studies had linked Chiapas to the Maya Block during its Mesozoic translation. The juxtaposition of Chiapas to southern Reforma is most likely post Kimmeridgian and does not appear to have played a role during the late Jurassic depositional setting. The proposed model allows for Kimmeridgian exploration targets to extend beneath the Artesa Mundo Nuevo Platform (southern Reforma Trend) and may be present under more favorable marine conditions in the western part of the Gulf of Venezuela. ■

Biographical Sketch

Peter Bartok is a Petroleum Exploration Consultant with research interests in complex salt tectonics and Regional Gulf of Mexico Tectonics and Williston Basin, as well as in the application of rock physics to exploration. He worked for three years with Pemex in southern Mexico. His experience with BP includes Project Management for Latin America and US Chief Onshore Geologist. He has evaluated prospects in over 40 basins of the world in Latin America, Europe, China and West Africa and was instrumental in defining the exploration technique that led to the discovery of the Pinda carbonates in Angola. Mr. Bartok received his Bachelor's and Master's degrees from the State University of New York. He has worked as a geologist for 20 years and as a geophysicist for another 20 years. Currently he is an Adjunct Professor in Petroleum Geology at the University of Houston, and is an Instructor at Petroskills on Structural Styles, Seismic Interpretation and Development Geology.