3:30 PM Murphy, Mike A.

**3:45 PM Nelson, K. D.**

**INDEPTH II (1994) DEEP CRUSTAL PROFILING IN SOUTHERN TIBET**

NELSON, K.D., WU, C., COOGAN, M., Dept. of Earth Sci., S...
DEPOSITIONAL FACIES, SEQUENCE STRATIGRAPHY AND DROWNING OF THE COAHUILA CARBONATE PLATFORM, NORTHERN MEXICO. LEHMANN, Christoph. OsLEGER, David A.; MONTÁNEZ, Isabel P.

4:30 PM

The Lower Cretaceous (Albian) Coahuila carbonate platform of northeastern Mexico is coeval with the economically significant Valles and Golden Lane (Tupian) platforms to the south and the Giant Reef facies of the Northern Gulf of Mexico. Approximately 100 million tons of the Acata/Alcora/Upper Tamalipas Formations have been logged on a decimeter-scale over an area of 100,000 km² to determine platform geometry and facies relationships, and to develop a stratigraphic framework for the carbonate platform.

The Coahuila carbonate platform is a distally steepened ramp attached to the Coahuila basement block. Three distinct facies assemblages characterize the three major parasequences developed in the Coahuila ramp. 1) The ramp interior (Acata Formation) is composed of more than 60 evaporic parasequences deposited in a hypersaline, large-scale evaporative setting. 2) The evaporite margin (Upper Acata, Coahuila Formation) is composed of a massive, closed-basin paralic carbonate that exhibits a high-energy, brackish-water setting.

Both the evaporative and peritidal parasequences are interpreted to represent high-frequency accommodation events (10°-105 year range). These parasequences are arranged in a series of parasequence sets and are characterized by an alternating cycle of transgressive and regressive sedimentation, followed by an increase in accommodation space. The Coahuila carbonate platform was abruptly drowned, marked by the deposition of a 20 m thick, planar foreset-dominated, deltaic, laminated mudstone. This drowning event terminated Cretaceous platform development in the region and might coincide with the late Albian globally recognizable Oceanic Anoxic Event (DEE 1C).

5:15 PM

GUERTIN, Laura A.

HIGHLANDS? MOBILIZATION AND DEPOSITION OF NEogene SILICICLASTIC SEDIMENTS, SOUTH EAST FLORIDA. GUERTIN, Laura A.; McNEILL, Donald F.; Univ. of Miami, RMSA-MGG, 4600 Rockefeller Cwy, Miami, FL 33149; LJD2, Barbara H., USGS Center for Coastal Geology, 600 4th St. South, St. Petersburg, FL 33701.

Two new continuous core holes show a significant thickness (100 m) of siliciclastic sediments in the shallow subsurface of the Florida Keys. The siliciclastic sediments are underlain by middle Miocene (?) limestone and overlie by late Pliocene (?)-Pleistocene limestone, serving as the foundation for modern Florida Keys. Initial results from biostatigraphic (planktonic foraminifera) data indicate that marine deposition of these siliciclastic sediments on the southeast Florida peninsula occurred more than 100,000 years ago.

Aggradation plots have been generated from constraining biochrons of first and last appearances of key species in the siliciclastic sequence of both cores (Cape Romano and Long Key). The plots suggest that the sea-level rise and erosion of the siliciclastics in southeast Florida was at a relatively high sea-level rate (10-114 cm/kyr), within a 0.5 m.y. interval. The middle Pliocene age for the siliciclastics is also consistent with a proposed highstand in sea level (mid-Pleistocene warm period) and the initial lowering of sea level associated with the onset of Northern Hemisphere glaciation (~3.2 Ma). If confirmed, these results suggest that the mobilization and redeposition of both the fine- and coarse-grained siliciclastic sediments of southeast Florida occurred during a highstand and/or during the subsequent, initial fall in sea level.

4:45 PM Prothero, D. R.

MAGNETIC STRATIGRAPHY OF THE LATE MIDDLE EOCENE COLDWATER FORMATION, CENTRAL VENTURA COUNTY, CALIFORNIA: IMPLICATIONS FOR SEQUENCE STRATIGRAPHY.

PROTHERO, D.R., and VANCE, E.H., Jr., Department of Geology, Occidental College, Los Angeles, CA 90041

Until recently, the middle Eocene Coldwater Sandstone could not be precisely dated beyond its "Tejon Stage" interval (which range from 33-44 Ma). Yet the upper Coldwater red beds which grade into the overlying middle Eocene Sespe Formation in upper Sespe Creek, Ventura County, (California) produces several mammalian faunas which greatly improve the biostatigraphic control. After removal of magnetic overprinting by stepwise thermal demagnetization, most samples yielded a stable primary remanence that persisted through final fold test, and shows a clockwise rotation of about 10°-17° consistent with the post-Miocene in the western Transverse Ranges. Magnetic stratigraphy and refined chronostratigraphy of the late Uintan and Duchesnean mammals found within the red beds in the Coldwater show that the upper Cosy Deli-Coldwater-Sespe sequence of central Ventura County spans Choris C19r-Ch31 (approximately 35-42 Ma). The late Uintan Hartman Ranch f.d. occurs near the top of Choris C19r (about 43 Ma). By using a refined chronostatigraphic and radiometric ages of the similar Tapo Canyon and Brea Canyon local faunas in Simi Valley. Several Duchesnean localities (with Duchesnuessa and Amyonotus) are known in this area; these all occur in early Choris C19 (about 40 Ma). These new biostratigraphic and magnetostratigraphic data allow a test of a recent sequence-stratigraphic model proposed for the Cosy Deli-Coldwater-Sespe Formations. New biostratigraphic and magnetostratigraphic data allow a test of a recent sequence-stratigraphic model proposed for the Cosy Deli-Coldwater-Sespe Formations. Campion et al. (1994) interpreted three sequence boundaries in this interval, which correlated with the Taz-3.6 and 4.4 parts of the Haq et al. (1987) curve. With better biostatigraphy, it is clear that none of these three sequence boundaries are eustatically controlled, and they are not correlated with sea-level changes from the Taz-3.4 and 3.3 intervals. Clark (1994) recognized three distinct sequence boundaries in the same sections, but did not suggest eustatic control; indeed, none of his sequence boundaries match the Haq et al. (1987) curve, either. Such mismatch further reinforces the cave that sequence-stratigraphic correlations are only as good as the biostatigraphic data on which they are based.

SESSION 120, 1:30 PM

Wednesday, November 8, 1995

TECHNICS IV: Himalayan Tectonics

5:00 PM

Pinnik, O. V.

Upper Eocene - Lower Miocene Facies, Sequences, and Sea-Level Change Interpretation from the Strata of the Northern Aral Sea Region (Kazakhstan).


The Northern Aral Sea region is part of the Upper Eocene - Early Miocene Tethys, and was a transitional zone between continental and marine depositional environments on a passive margin. Clastic and carbonate depositional environments were dominated by an alternation of facies from fluvial and deltaic plains (Turgai Trough) and Kuzyr and Ust-Kerch basins with marine with condensed sections and turbidites (Ust-Plateau). The section is characterized by explicit cyclicity which is interpreted to be caused by eustatic, tectonic, and/or climate changes. Parallel facies (deltaic, lacustrine, estuarine) that comprise the transition zone from continental to marine sedimentation are especially sensitive to the relative sea-level change. The excellent exposure of these strata in numerous outcrops and the presence of a number of wells drilled throughout the area makes it possible to examine in detail different facies successions and trace their lateral and vertical transitions within the stratigraphic units. Preliminary stratigraphic and sedimentologic analyses of outcrops and wells made it possible to subdivided the section into depositional sequences and reconstruct development of the depositional systems and their response to sea level change. Despite significant spatial in tectonic subsidence and sediment supply rates, sequences and systems tracks can easily be traced throughout the margin. Preliminary results suggest that the margin developed in a tectonic and sedimentary regime generally similar to the U.S. Atlantic and Gulf margins, and that eustasy played a major role in controlling sedimentation. However, in some biostратigraphically preserved intervals, sea level events referred to in the Aral sections do not correspond to those reported from Atlantic and Gulf Coast margins. For example, the maximum significant sea level fall in the Aral region appears at the Eocene/Oligocene boundary or in Lower Oligocene (according to biostratigraphic data), but in the U.S., a similar sea level fall is inferred in the Middle Oligocene. While it is possible that the interplay between subsidence and sedimentation controls the basin Oligocene event in the Aral region and the Middle Oligocene event in the Atlantic and Gulf margins independently, we consider it more likely that they were caused by the same eustatic event, and that the biostratigraphic correlation of the Aral strata to re-examine our basic stratigraphic analyses of the Aral sections may provide important data for identification of true Eocene-Miocene eustatic events.

1:30 PM

Pinnik, David A.

TECHNICS AND SEDIMENTATION IN THE PAKISTAN FORELAND DURING THE Plio-Pleistocene.

Pinnik, David A., Amoco Production Company, P.O. Box 800, Denver, CO 80201-0800.

Pliocene and Pleistocene syntectonic sedimentation in Pakistan occurred in response to tectonically and geographically diverse environments related to the most recent stages of Himalayan convergence. The availability of accurate magnetostratigraphic, biostratigraphy, and isotopic data allows the determination of the tectonic framework of the Himalayan orogen. Superimposed on the background of deposition of the main foreland basin for the Indus River, were numerous basins which received sediment input in response to regional tectonic regimes that partitioned the foreland. In the hinterland region, intermontane basins such as the Kirthar Basin rapidly filled from the Ferozpur Range from 4.0 to 1.5 Ma. In response to sediment ponding behind the uplift, the Nanga Parbat Massif. The Karkees sequence in the Kashmir intermontane basin reflect uplift of the Ferozpur Range from 4.0 to 1.5 Ma. In the Campbell and Peshawar intermontane basins, deposition

ANNUAL MEETING, NEW ORLEANS

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ABSTRACTS WITH PROGRAMS

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