

Bird, D. E., Burke, K., Hall, S. A., Casey, J. F., and Sawyer, D. S., 2005, **Callovian – Oxfordian and earlier Central Atlantic ridge jumps** (abstract): American Association of Petroleum Geologists, International Conference, Paris, A9.

We identify two ridge jumps between the Atlantis and Fifteen-Twenty fracture zones during the early evolution of the central Atlantic Ocean: (1) ~170 Ma on the western flank, and (2) between 164 Ma and 159 Ma on the eastern flank. The jumps indicate changes in plate motion as North America separated from Gondwana. We have mapped five Mesozoic Chrons within the Jurassic Magnetic Quiet Zone (JMQZ, M28 to M40) outboard of the Blake Spur Magnetic Anomaly (BSMA) of North America, and from its conjugate S1 anomaly off Africa. Chron 40 (167.5 Ma) is located approximately 65 km outboard of both anomalies. The East Coast Magnetic Anomaly (ECMA), is located about 180 km west of the BSMA on the North American side but its suggested conjugate, the S3 anomaly on the African side, is located only 30 km east of S1. Our results thus support Vogt's 1971 suggestion of a ridge jump to the east between the BSMA and ECMA anomalies at ~170 Ma. Similarly, the JMQZ width between the Atlantis and Kane fracture zones is about 70 km greater (i.e., ~22% greater) on the African side than on the North American side. Correlatable magnetic anomalies on the African flank suggest to us a second ridge jump to the west. Modeling results indicate that this jump occurred between 164 Ma and 159 Ma (Callovian – Oxfordian), approximately at the time suggested for the onset of seafloor spreading in the Gulf of Mexico.