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Deep Ocean Interaction in a Post-Flood Warm Ocean Scenario

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18° (Pryor 1971). Most grains are subrounded, with <15% being well rounded and substantial amounts of subangular and angular grains. In addition, these sandstones contain moderate amounts of silt and clay, including muscovite mica.

Nevertheless, creationists have yet to develop a detailed alternative model of how these sandstones were deposited. It is proposed here that they were formed by rapidly migrating subaqueous sand waves in shallow water under the influence of strong unidirectional currents during a major transgression of the oceans onto the continents. The fields of large sand waves formed under tidal conditions in modern shallow seas and estuaries probably provide the closest modern analogue (Garner 2008). The sand in these Permian deposits may have been derived from the re-mobilisation of pre-Flood coastal or desert dunes or the catastrophic erosion of igneous and metamorphic rocks during the Flood. Careful textural, mineralogical and provenance studies are now needed to determine the origin of the sand in formations such as the Coconino.

This study is being undertaken as part of the Flood-Activated Sedimentation and Tectonics (FAST) project funded by the National Creation Science Foundation (NCSF).

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4. Deep Ocean Interaction in a Post-Flood Warm Ocean Scenario

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Explanations for the Pleistocene Ice Ages in the context of a recent creation have ranged from denial of the existence of ice ages to a single contracted ice age with multiple surges. This second position mentioned in The Genesis Flood (Whitcomb and Morris, 1961) and modified by Oard (Oard, 1979) relies on a warm ocean in the wake of a global flood. The warm ocean provides a ready source of water vapor, which can be deposited over cold polar land masses as snow. Since a warm ocean prevents land masses from cooling sufficiently to accumulate snow, it is necessary to propose a cooling mechanism to offset the heat flux from the ocean. The most likely mechanism is reflection of sunlight by high concentrations of volcanic aerosols in the atmosphere. Two validity studies of this scenario were performed by Spelman and Vardiman. Spelman looked at the sensitivity of atmospheric parameters to different sea surface temperature distributions (Spelman, 1996) and Vardiman studied the enhancement of precipitation due to hot mid-ocean ridges (Vardiman, 1998). Over the past decade no additional simulations have been published using this scenario.

Simulation of climate has progressed significantly over the past ten years and a number of models are available to study the validity of a rapidly developing ice age due to warm oceans. Current climate models not only simulate the circulation of the atmosphere, but also the circulation of the ocean, build up of sea ice and response of land surfaces. Two models from the Goddard Institute of Space Studies (GISS) are used for this study. GISS Model II (Hansen, 1983) simulates the atmosphere at a resolution comparable to the studies done by Spelman and Vardiman. This earlier model can also be run efficiently on a desktop computer in order to explore a number of preliminary scenarios. The GISS Model E (Schmidt, 2006) is designed to be more flexible and makes it easier to use different ocean models and aerosol parameterizations.

To limit the scope of this study, only the heat flux from the ocean surface and between the ocean mixed layer and deep ocean is studied. The mixed layer includes the first 50 - 100 meters of the ocean's surface. It varies with latitude and season and is mixed by thermal gradients and wind-shear. The deep ocean interacts weakly with the mixed layer due to stability of the lower ocean beginning at the thermocline. Regions of sinking and upwelling through the mixed layer do exist due to the thermohaline circulation and interaction with continental boundaries; however, in modern day oceans this interaction has a minimal effect on climate variability over the time period of centuries.

If the deep ocean was warmer in the recent past, then there would be an enhanced vertical circulation over the full depth of the water column. If the full depth of the ocean were treated as a mixed layer, the thermal adjustment timescale would be 40 years (Marshall, 2008). Model II and Model E are used to calculate the heat flux entering the mixed layer from the deep ocean. By comparing current ocean heat fluxes with that of a warm deep ocean it is possible to verify the cooling rate of the deep ocean and to infer an enhanced interaction between the deep ocean and the mixed layer. This enhanced interaction not only includes heat transport, but also nutrient transport, which may have implications for the ocean biome.

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