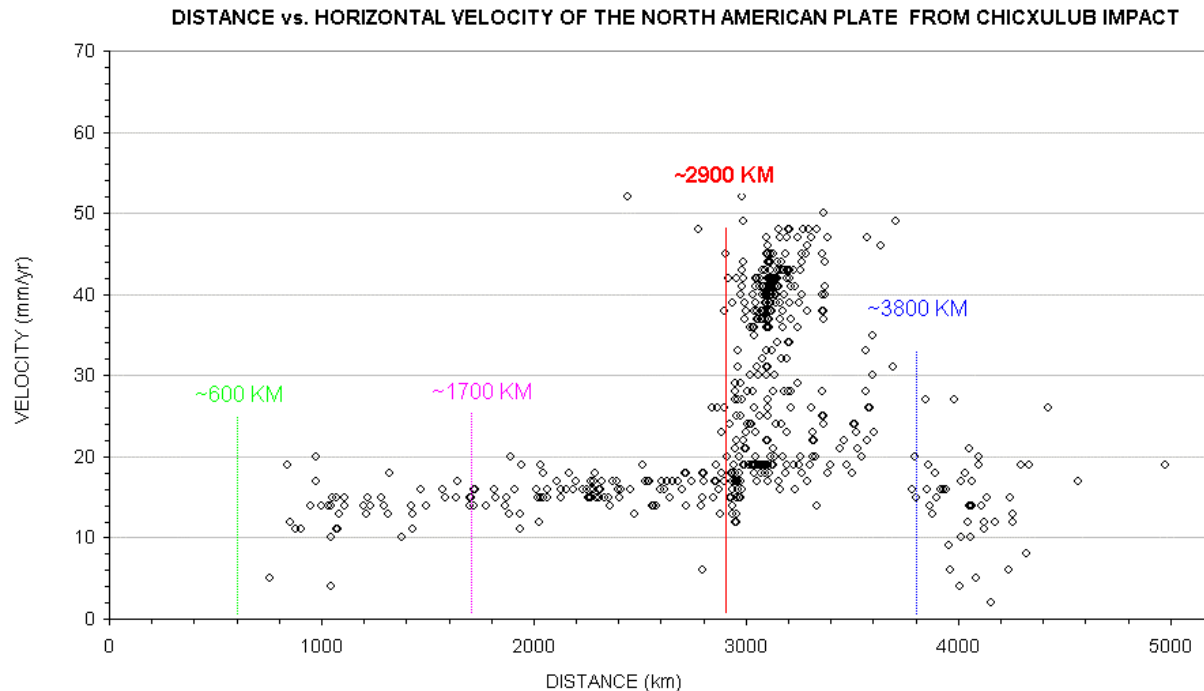


**The horizontal component of plate motion for the North American plate versus distance from the Chicxulub impact shows a gradual, linear velocity increase up to about 2900 km distance, beyond which, velocities abruptly increase**



**The 2900 km distance is the same as the depth from impact to the core-mantle boundary and therefore, today's plate kinematics may continue to signal a deep tectonic response to large, ancient impact events.**

**This led to a hypotheses that large scale, multi-ring impact structures stem from impact energy reflecting from major phase boundaries in the Earth's interior back to the surface to form circumferential arches and troughs in the crust.**

**Moreover, because horizontal plate movement in the region appears circumferential to the impact point, large impacts such as Chicxulub probably play a much more significant role in plate tectonic theory than has been realized, and can apparently alter global plate dynamics**

**To investigate these hypotheses, GIS was employed to conduct various spatial analyses of past and neotectonic crustal activity including sea-floor spreading records in the west-central Atlantic region, historical seismicity, and current plate motions.**

**F3**

Herman, G. C. 2006, [Neotectonic setting of the North American Plate in relation to the Chicxulub impact](#): Geological Society America Abstracts with Programs, Vol. 38, No. 7, p. 415