



Fictitious Supercontinent Cycles

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“Supercontinent cycles” or “Wilson cycles” is the idea that before Pangaea there were a series of supercontinents that each formed and then broke apart and separated before colliding again, re-aggregating, and suturing into a new supercontinent in a continuing sequence. I suggest that “supercontinent cycles” are artificial constructs, like planetary orbit epicycles, attempts to describe geological phenomena within the framework of problematic paradigms, namely, planetesimal Earth formation and plate tectonics’ mantle convection.

The so-called ‘standard model of solar system formation’ is problematic as it would lead to insufficiently massive planetary cores and necessitates additional ad hoc hypotheses such as the ‘frost line’ between Mars and Jupiter to explain planetary differences and whole-planet melting to explain core formation from essentially undifferentiated matter.

The assumption of mantle convection is crucial for plate tectonics, not only for seafloor spreading, but also for continental movement; continent masses are assumed to ride atop convection cells. In plate tectonics, plate collisions are thought to be the sole mechanism for fold-mountain formation. Indeed, the occurrence of mountain chains characterized by folding which significantly predate the breakup of Pangaea is the primary basis for assuming the existence of supercontinent cycles with their respective periods of ancient mountain-forming plate collisions.

Mantle convection is physically impossible. Rayleigh Number justification has been misapplied. The mantle bottom is too dense to float to the surface by thermal expansion. Sometimes attempts are made to obviate the ‘bottom heavy’ prohibition by adopting the tacit assumption that the mantle behaves as an ideal gas with no viscous losses, i.e. ‘adiabatic’. But the mantle is a solid that does not behave as an ideal gas as evidenced by earthquakes occurring at depths as great as 660 km.

Absent mantle convection, plate tectonics is not valid and there is no motive force for driving supercontinent cycles. The reasonable conclusion one must draw, as in the case of epicycles, is there must exist a new and fundamentally different geoscience paradigm which obviates the problems inherent in plate tectonics and in planetesimal Earth formation and yet better explains geological features.

I have disclosed a new indivisible geoscience paradigm, called Whole-Earth Decompression Dynamics (WEDD), that begins with and is the consequence of our planet’s early formation as a Jupiter-like gas giant and which permits deduction of: (1) Earth’s internal composition and highly-reduced oxidation state; (2) Core formation without whole-planet melting; (3) Powerful new internal energy sources, protoplanetary energy of compression and georeactor nuclear fission energy; (4) Mechanism for heat emplacement at the base of the crust; (5) Georeactor geomagnetic field generation; (6) Decompression-driven geodynamics that accounts for the myriad of observations attributed to plate tectonics without requiring physically-impossible mantle convection, and; (7) A mechanism for fold-mountain formation that does not necessarily require plate collision. The latter obviates the necessity to assume supercontinent cycles.

The fundamental basis of geodynamics is this: In response to decompression-driven Earth volume increases, cracks form to increase surface area and mountain ranges characterized by folding form to accommodate changes in curvature. Resources at NuclearPlanet.com .