

GIANT IMPACTS, OCEAN BASINS AND CONTINENTAL CRUST

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I postulate that planet Earth experienced mega-impacting synchronous with (4.2-3.8 my ago) and grossly similar to giant impacts causing lunar maria. As with lunar counterparts, terrestrial mega-impacts were asymmetrical and of cumulative crescent or horseshoe-shape. Mega-impacting initiated deep seated, long-lived, global, thermal convection systems including mantle plumes which have given rise in stages to modern continents and ocean basins. Pangaea, the crescent-shaped, Mesozoic landmass is an outgrowth and reproduction of the mega-impact pattern. Ocean basins (anti-continentals) are of two main types:

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1) ancestral, the negative consequence of mega-impacting eg. Pacific Ocean, and 2) extensional, the positive consequence by way of fragmentation and drifting of ensuing sialic super cratons eg. Atlantic Ocean. Three consecutive building stages of continents are postulated: 1) Nucleal Stage (Archean time): development of numerous small island or proto-continents at or near major downward convection currents the result of interaction of small thin, tectonically supple "oceanic" plates, a process of miniaturized soft plate tectonics; 2) Craton or Platform Stage (Proterozoic time): aggregation of the small sialic nuclei over the same main downcurrents to form metastable to stable shields featuring plentiful granulite in deep central parts; 3) Extensional Stage (Phanerozoic time): fragmentation of the cratons responding to subjacent, now up-welling convection currents with continental drifting by the process of modern plate tectonics.