A chain of events-from cosmic to terrestrial- leading to origin and development of the Homo genus

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The cosmic pair Earth-Moon (Fig. 1) moves in the elliptical circumsolar orbit with periodically changing accelerations. That is why both bodies are warped by a series of waves of various lengths (harmonics). The mechanical energy of movement is transferred into a heat energy melting the bodies' mantles-making asthenospheres. Produced basaltic liquids are lifted up into crusts for "healing" lost angular momenta because of decreased rotation rates of bodies. The small satellite is heated and melted first. Its crustal basalts have ages 3-4.5 billion years. Much more massive Earth-81 times- is proportionally heated and melted much later: 3-4.5 billion divided by 81 gives 37-55 million y. (the proportion is according to the first Newton's law). This is the Mz-Cz age – age of main oceanic basaltic covers and many other significant geological and biological events.

The Mz-Cz activization ("explosion"), the mantle melting and enormous degassing leads to terrestrial relief sharpening (uplifts to 1-2 kms are measured). This is especially noted at ancient terrains of the Archean platforms (cratons) [1]. Most raising continent is the African one (Fig. 2). It raised to 300 meters in the Early Miocene and to 900 m in the Late Pliocene and Pleistocene [1]. The most actively uplifting is the bulge of the Eastern Africa where remains of ancient hominids are actively searched. There are found numerous remains of australopithecines of several species. The oldest known up to now have an age about 6 million years (Pliocene-Miocene). The first hints to genus *Homo* are in a fossil jaw from Afar having an age about 2.85 million y. BP [2, 3]. The earliest representatives of the genus *Homo* – *Homo habilis* were not perfect (complete) bipedalists (though australopithecines already walked on two legs). The process of taking off hands from earth accompanies tectonic uplift because a human body have to increase its height to diminish a ratio of weight to height required by a raising tectonic block increasing its angular momentum. Thus, a body grows, straightens, a head, brain, and sapientation increase.

The further development of the genus *Homo* – from *H. habilis* through *H. erectus/ergaster* to *H. sapiens* – was on the background of the constantly rising (uplifting) African continent Increasing its angular momentum. This required an anti-action in the anthroposphere – diminishing bodies' mass or a ratio of mass to height (stature). Two strategies were observed showing in real morphological peculiarities. Increased stature of small mass men as in nilotes of the Eastern Africa were the tectonic "bulge" rises most actively. Another striking feature is development of the steatopygism – growing the lower part -buttocks of a body. This redistribution of mass lowers the center of gravity, thus the angular momentum. This body form is observed among ancient and present bushmen and gottentotes populated in the past the whole Africa (Fig. 3, 4, 5).

In brief, to understand origin and evolution of the genus *Homo*, one must consider a tectonical background of an area where this happened (tectonoanthropology). Only in the equatorial rapidly tectonically rising domain it could be realized (angular momentum consideration)- in the African continent. Such tectonic and geographical feature appeared because of a tremendous planetary cosmic event –the Mz-Cz explosion in heating, melting, and degassing the mantle. It was a sequence of the planet Earth moving in keplerian elliptical orbit with periodically changing accelerations. The Earth's mass was a critical parameter determining a time localization of this event (the Newton's law of inertia). A cosmic scale for this event is the Moon with its small mass and the early Archean "basaltic explosion".

References:

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Fig. 1. Earth and Moon in cosmos, PIA17170

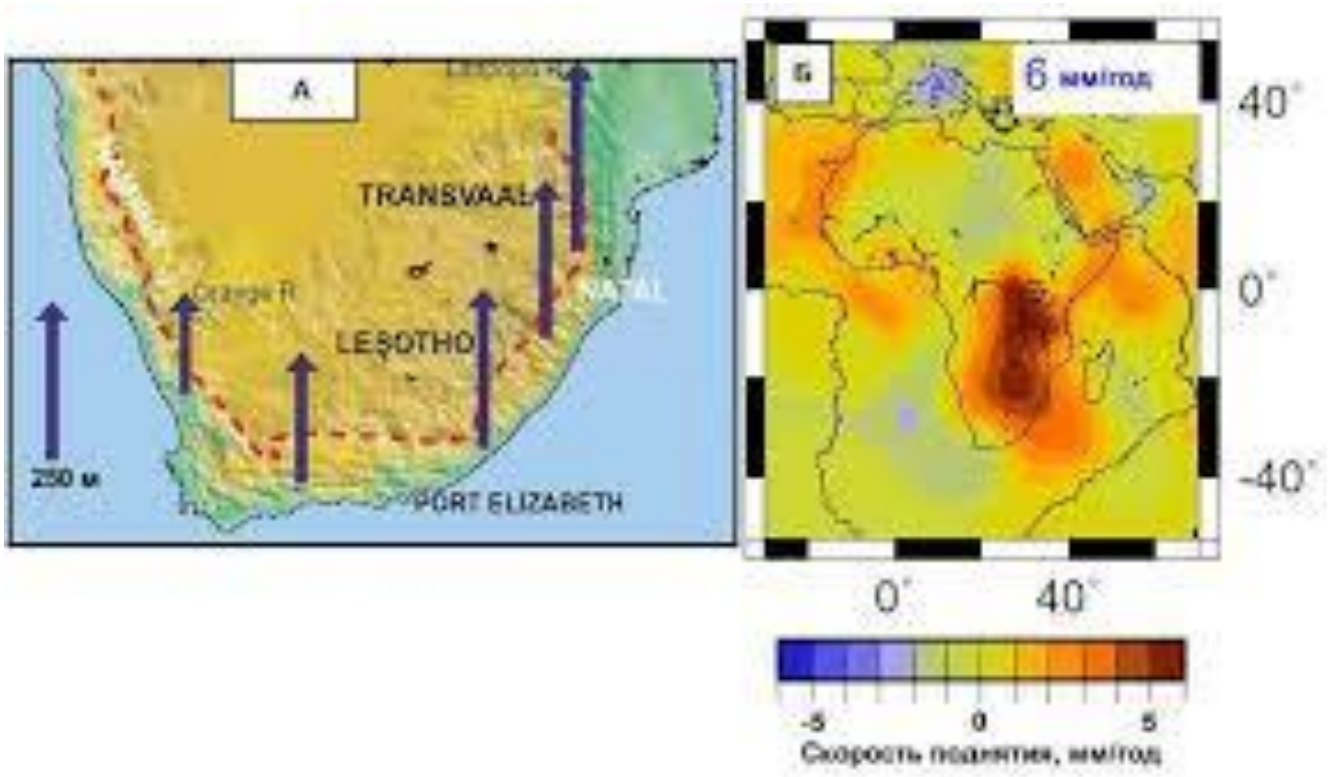

Fig. 2. Uplifting Africa

Fig.3. Ancient steatopygie

Fig.4, 5. Present steatopygie