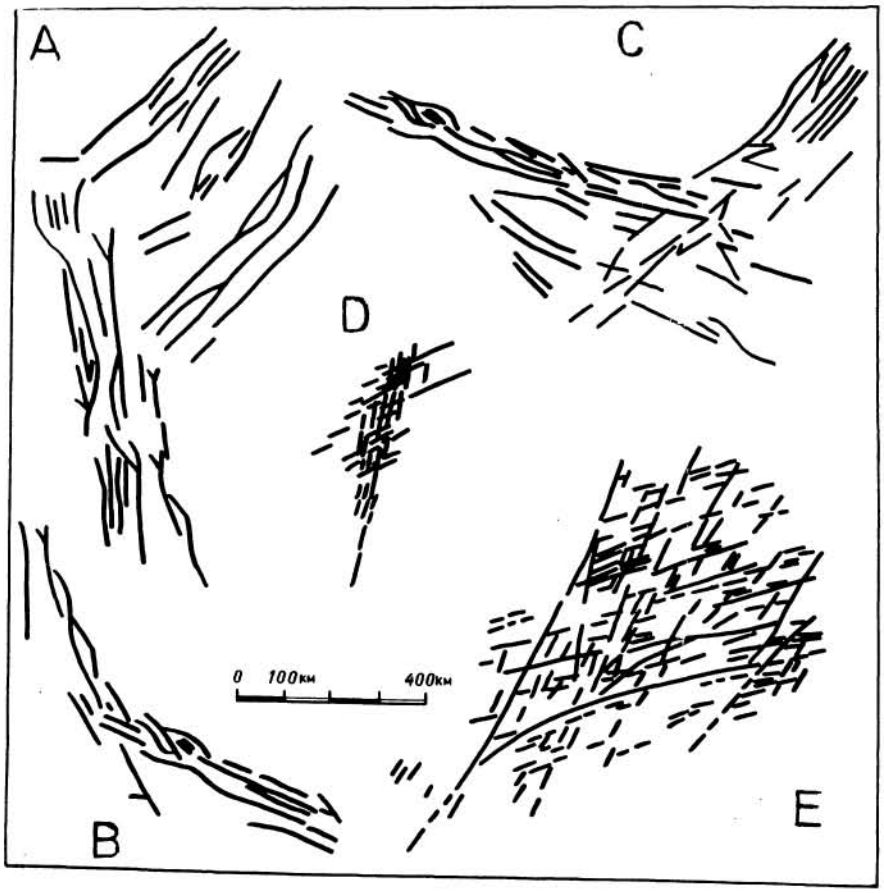
POLYGONAL MULTI-RING SYSTEMS OF TRITON AND RELATED FEATURES OF THE MOON,EARTH AND VENUS; G.G.Kochemasov,IGEM of the Academy of Sciences of the USSR,35,Staromonetny,Moscow, 109017,USSR.

Pictures of Triton's surface sent by Voyager in summer 1989 attract attention by large polygonal rings compatible with regular "planetary" net of fractures(1,2). It is obvious that directions of rectilinear segments of the rings (system of intersecting tangential lines) is controlled by directions of "planetary" faults presented by long but narrow and low double ridges. Similar relations between planetary scale multi-ring systems and regmatic net of weakness zones (lineaments) we observed on surfaces of the Moon,Earth and Venus (3,4,5). There are many reasons to believe that such relations are generally characteristic of rotating solid selestial bodies but their more or less clear development depends on speed of rotation and physico-chemical properties of a specific body (composition,structure,temperature etc.). Physico-chemical characteristics of Triton (rich in volatile,prevalence of ices,low temperature etc.) appeared probably favourable for clear development of general planetary tendencies towards structurising of outer solid spheres. Triton with its soft and slushy surface due to possible enrichment with frozen nitrogen and methane (1) is a natural model of these processes. (Luckily,very rarefied atmosphere of the satellite did'nt prevent to reveal surface structures).At other bodies of the Solar system combination of factors decisive for development of general planetary laws can be not that favourable and hence manifestation of these laws may be less clear (masked) or absent. At solid bodies with the outer spheres made of silicates (the Earth's group planets) they -the planetary laws - can be revealed in some cases (planetary lineaments,rings).



POLYGONAL MULTI-RING SYSTEMS OF TRITON... Kochemasov G.G.

We have paid attention to peculiarities of tectonics of ring superstructures of the Mare Orientale (Moon),the Congo and East-European Archean cratons (Earth) and the Lakshmi Planum (Venus) (3,4,5,6). Likeness between them,in particular,was revealed in similar type of control of magmatic centres in their frames by tangential weakness zones. We have also paid attention to peculiarities of formation of ring weakness zones by rectilinear tangential segments determining "polygonality" of the rings (3,7). Here we emphasize peculiarities of joining (intersection) of tangential zones of weakness (fault zones) in above-mentioned ring superstructures of the Moon,Earth and Venus.

The figure shows characteristic joinings (intersections) of rectilinear parts of rings in structures of the Lakshmi Planum (A,B,C),the Mare Orientale (D) and the Congo craton (E). Schemes of the superstructures see in (5).

A. Akna Montes (obtuse angle between directions of segments is 128°);
B. Joining of Akna Montes to Vesta ledge (142°);
C. Vesta ledge (116°);
D. North-western sector between central depression of the Mare and the Inner Rook Mountains (126°);
E. Cameroon-Adamaoua mountains; lineaments of joining zone of the Cameroon and Adamaoua-Bayuda tangential lines according to cosmic photos (126°).

Shown in the figure complex joinings,interpenetrations of two neighbour rectilinear systems testify to their simultaneous or near in time origin; this conclusion is also favoured by their belonging to common ring zones.

A good example of polygonality in frame of endogeneous ring structures of lesser size - the ovoids with hundreds of kilometers in diameter on Venus plains - one can see in (8).

Note to the figure: Scale refers to "A","B","C","E"; for "D" it is two times larger.

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