FORMATION MODEL OF NORTHERN FAN OF RIDGE BELTS, VENUS.
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Ridge belts are wide spread in the North of Venus (Fig.1). The submeridional fan of ridge belts, which is approximately symmetrical to 210 meridian, spread from the North Pole area to the South. One can find the description of these belts in (1,2,3,5). They were interpreted either as fold belts (1,2,3) or spreading zones (5).

The author considers them to be fold zones. The following data recounts for this: (i) the structural pattern of ridge belts is similar to that of fold belts of the Earth and ridge belts of Oceanus Procellarum on the Moon; (ii) morphology of separate ridges and their combinations resembles the morpohology of anticline folds and anticlinoriums of the Earth; (iii) morphologically the ridges of belts and coronae and Akna and Freyja mountains do not differ, and the ridges of coronae, Akna and Freyja mountains are definitely compression structures; (iv) the ridges of some coronae (Tusholy, Feronia) directly transfer into ridges of ridge belts (4); (v) trench-like depressions along the borders of some ridge belts resemble trench-like sedimentary basins in front of many fold belts of the Earth (3).

Within the limits of the North fan of ridge belts young volcanic plains predominate (5). In general ridge belts are younger than those of volcanic plains; only in some cases one can observe the volcanic plains being younger than the ridge belts.

In the evolution process of the North fan of ridge belts we can outline the following stages: (i) areal volcanism, formation of fracture belts and volcanic centres on the site of modern ridge belts; (ii) areal compression of territory, formation of ridge (fold) belts, transformation of volcanic centres into arachnoids and dome-like uplands into coronae; (iii) local latest volcanism.

Probably, at the beginning the whole modern area of ridge belts fan underwent areal extension, and then areal compression. In fig.2 a supposed model of ridge belts formation is shown. Assumingly, the areal extension and volcanism were brought about by the mantle heating, and the subsequent areal compression - by mantle cooling. The position of the phase boundaries in the mantle at the depths of nearly 400 km and 700 km depends upon the pressure and temperature (6). It means that the areal mantle heating can result in the lithosphere extension, and the subsequent cooling - in its compression due to the displacement of the phase boundaries in the mantle. The ridge belts were formed due to the areal compression. Probably, additional compression was brought about by sinking of mascons under the ridge belts (Fig.2).
Fig. 1. Position of ridge belts in the North part of Venus. 1 - plains, 2 - ridge belts, 3 - mountain-ridge belts, 4 - tesserae, 5 - dome-like uplands, 6 - coronae.

Fig. 2. Model of the formation of the North fan of ridge belts.