GRAPHIC PRESENTATION OF CHEMICAL COMET MODEL.


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Offered in [1] and developed in [2, 3], qualitative model of comets differentiation here has been presented in graphic view that allows to track more distinctly all stages of their evolution.

How follows from Fig.1, cores of comets is primary the material consisting of frozen flying mixture hydrides (basically - a methane, a silane) and hydroxides (basically - brusite). External shell of core is formed in accordance with scheme described in [2,3] when a comet encounter with the Sun. Reactions of oxidation silane probably commit on surfaces of particles brusite, and it is possible with dehydration of them. Water appear here. Of energy standing out in processes of these reactions sufficiently for forming the magnesium silicates only in thin layer of chemical reactor. Below they is absent, but there are water, brusite, silane. Possible in following cycle of approachement with the Sun will here be renewed chemical activity of comet and the mantle (Fig.2) is product of it. In the course of time, volume of core is decreased, but volume of mantle is being enlarged. Here does not occur of the essential change of mineral component in contrast with the external shell of the core. But of water in the mantle is already not. And probably water has been connected of serpentine in the external shell of core. Energy is being transmitted in the mantle together with the hydrogen from the chemical reactor. But it is sufficiently only for transmutation in the mineral structure of mantle of limited hydrocarbons into unlimited hydrocarbons of ethylene and diene rows.

Further transformations of a hydrocarbons and mineral part occur in the cortex (Fig.3).

The thickness of this layer is not great because solar radiation have a small efficient penetration depth.
Round-robin and aromatic hydrocarbons are being formed here. The joins Mg$_2$Si, being product of recovering the oxidized magnesial silicates by the flow of a hydrogen from the core help possibly at this processes. The other product - water is lost by the comet. Certainly, its surface is renovated under the action of various causes up to destroying at the clashes with other cosmic bodies and of spraying its material in the explosive oxidation reactions of methane and silane. It is possible as well destruction of comet spontaneously when defensive layer between the core and area of chemical reactor is thin and, consequently, comets - a source of hydrocarbons of the Solar system.

References: