



The Earth Magnetic Field

Magnetic Field of the Earth

During the liquid stage of the Earth's proto-masses development, was formed liquid **G** nucleus. It's fiery diffuser by this time, which sorts liquid layers of heavy and super-heavy metals in the physical center by density. Let's mark this volume with letter **n**. The **G** liquid nucleus was surrounded by the fiery liquid masses different admixtures and oxides more light chemical elements.. Let's mark this volume relatively with letter **m**. Geo-evolution of Planets at the liquid stage is characterized by the following common regularity. Rotation of **m** volume liquid layers toward the rotation poles decreases little by little. The inner nucleus rotation in that stage always less then rotational speed of **m** masses equatorial layer. Convection streams within layers of the **m** masses are characterized complex turbulent movement around **n** nucleus during the liquid stage of evolution. These streams have turbulent movement and are moving around the **n** nucleus toward the direction of the rotation. Almost convection streams form summery magnetic field during this stage. The summary magnetic field creates later stabile magnetic field of the solid **n** nucleus. During the liquid stage of evolution geographical magnetic poles of Earth **m** masses exactly coincided to the rotation axis. Of course the inner **n** nucleus is in the physical centre

Nucleus **n** is characterized by the less rotation speed toward the **m** masses. Because of radioactive decomposition in the **n** nucleus, huge amount of heat is released. It helps rapid movement of turbulent convection streams within **m** masses to the end of the stage. Because of difference in densities, **n** and **m** masses do not mix up to the each other. As a result of chemical processes, the **m** volume creates free heavy metals. They have more heavy density and submerging into **n** liquid nucleus. Volume of the **n** nucleus step by step is increasing by additional masses.

Formation of the stable magnetic field, which exists in the inner metal nucleus nowadays, had been begun after the hardening process. Main reason is Convection streams within layers of the **m** masses. During hardening of the **n** nucleus complex turbulent movement is continuing around within **m** masses.

By the hardening stage **n** nucleus is under Influences of paramagnetic metals. They has own summary magnetic field and are very insignificant. It is caused by small percentage of those metals. Magnetic field of metal layers with diamagnetic qualities slightly weakens the summary magnetic field ferromagnetic metals layers. It can be said that during whole liquid stage the Earth had summary magnetic field, whih has formed separately within **n** and **m** masses

During the liquid stage of geo-evolution in the physical centre of planets its inner **n** nucleus metals layers begin to turn into solid condition. On the third mixed stage **D** layer of planets becomes solid and crust. It divides convection streams of **m** masses by two parts. It causes disappear of **m** masses magnetic field because split convection streams can not do it. Increasing of the **D** layer causes enlargement of the density within **E** geo-sphere. On the third stage planets surface begins to turn into solid condition, with formation very thin solid crust which is surrounded by thick fiery atmosphere of the light gaseous admixtures.

Into **n** liquid nucleus stable dipolar magnetic field is creating during hardening stage of nucleus. Ferromagnetic layers of the **n** nucleus can record the initial magnetic field made by turbulent convection streams of **m** masses. This is possible when temperature of solid ferromagnetic metals layers are lower, then the Curie point (under conditions of high density and colossal pressure). Parallel with the process of

magnetic field weakening caused by **m** masses, into heavy metals solid nucleus, paramagnetic and diamagnetic metals layers magnetic field undergoes mainly influence of recorded stable magnetic field formed by the ferromagnetic metals layers.

At last Earth's magnetic evolution was transferred to the stable stage, which is formed by solid **n** nucleus. It has almost stable dipolar magnetic field. From this stage Earth's dipolar magnetic field is made almost by the solid metals nucleus and its ferromagnetic layers. Diamagnetic metals layers into inner nucleus slightly weaken the summary magnetic field of ferromagnetic metals layers.

According to cosmogeological theory if a planet has a vivid rotation around its axis; it should have its own dipolar magnetic field. Only Mercury is an exception. Its rotation was almost prevented by the impact of big asteroid (huge chunk of geo-layer). Today's rotation speed could not be ever formed dipolar magnetic field of Mercury. Influence of changeable Sun's magnetic field on the Mercury's magnetic evolution is another topic of research.