

7. The notion of physical substance-time, which is the cause of growth of mass and energy of heavenly bodies, is introduced.
8. The supposition on nature of gravitational interaction of heavenly bodies due to physical substance-time is made.

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## Experiments on Change of the Direction and the Rate of Time

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Professor N.A.Kozyrev, Russia, who wrote some papers on causal or asymmetrical mechanics, made the first experimental study into the physical properties of Time. Experiments managing the direction and rate of Time were made. Since 1967 in Moscow Aviation Institute some research works were made under the direction of Professor Felix Yu. Zigel (up to his death in 1988) on UFOs, which had some technical forms. According to the work on State Budget topic "Preliminary researches on abnormal phenomena in the atmosphere" a lot of important information was collected on this phenomena. The information was used to determine connections between the cause and effect, and some physical processes were determined by authentic cases of traces and fragments, cinema and photos, and telemeter images of UFOs from 1987 up to the present time. There is data about influences of some parts of these objects and their body (surface of device) on the rate and direction of Time. To confirm this last statement a series of experiments was made with 4 types of laboratory systems (and in the present time one more system for new experiments is developed).

In experiments on deceleration and acceleration of physical Time in a small closed area of space (made since 1988) ***the effect of electromagnetic field influence on space-time continuum was tested.*** The experimental system used to investigate such kinds of effects consists of a set of electromagnets connected in series and in parallel and they are installed on spherical surfaces. In various experiments from 3 to 5 Electromagnetic Working Surfaces (EWS) were used. All EWS layers of various diameters were installed inside each other (similarly to a Russian doll "matrioshka"). The maximum EWS size was about meter, the minimum EWS diameter (internal) was 115 mm, which is the quite sufficient to allow experiments

with some control equipment, detectors and animals (various kinds of insects and laboratory mouse) to investigate the so called effects of ***converging spherical electromagnetic waves.***

The measurements of Time rate were made by all known modern means of measurement: all kinds of electronic, quartz, mechanical, nuclear clocks were used; as well as the specially produced duplicated quartz generators (to compare frequencies of standard heat-shielded generators); fiber-optic line diodes and other ways were tested. Though some kinds of measuring devices, for example, quartz clock, can be influenced by other physical factors, the duplication method of measurement allowed us to reduce the error of measurement. Thus a change in the rate of Time was produced (Professor Kozyrev named this "density of Time"). We can write  $t/t_E$ , where " $t_E$ " is the normal Time of the Earth space and " $t$ " is the local Time inside of the experimental system. This change in the rate was detected as several seconds per hour, but in one experiment the deceleration of the Time was measured as minus 4 minutes per 8 hours (minus 30 sec per hour) due to some incompletely understood reasons. Slowing down of the rate of Time up to minus 1,5 sec per hour and acceleration up to plus 0,5 sec per hour was produced and explained. If we accept the usual Earth Time as  $t_E = +1$  it will become clear that we investigated a change in the speed of Time through a very small range:  $+ 0,99 < t/t_E < + 1,01$ . So, the tested subjects and animals at any mode of operations (slowing down or acceleration) were moved into the Future faster or slower than those in normal space.

Through experiment it was established that the processes of slowing down and acceleration of Time are absolutely different. The slowing down of Time was smoother and steadier than acceleration, which showed sharp jumps. The mode of acceleration is unstable and it depends on some external factors. In particular, the instability of Time acceleration is connected to the period of day or night and also the Moon phase, probably to other reasons. One of the reasons is human presence near the Time Machine. Even small external effects, for example mechanical vibration, can produce a great result and change the value of the effect.

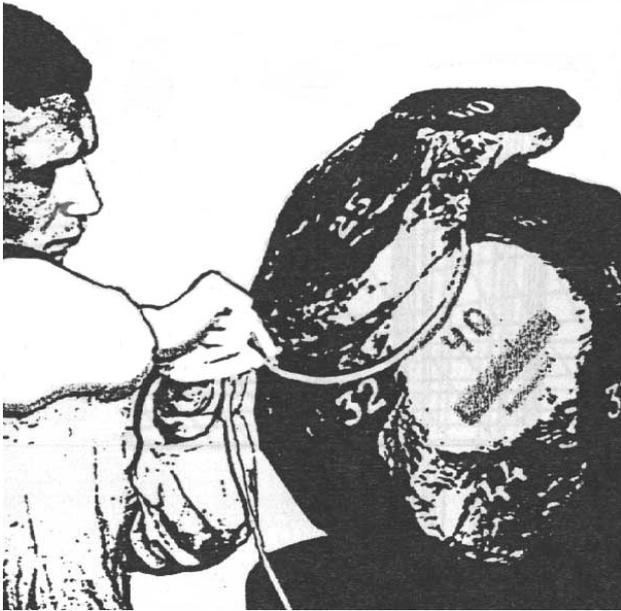


Fig.1 Dr. Chernobrov and his Time Machine

***Despite small size of change of Time, even such a small acceleration can be called "trips in the Future" but the slowing down less than - 1 hour per hour cannot be considered as "trip in Past". Physics of Future Time is different in principle to Physics of Past Time.***

Present Time is the transition or conversion of a multi-alternative Future Time in the unchangeable Past Time. So, flight to the Past Time (at the "negative density  $t/t_E$ ") and flight to the Future Time should be different. It can be compared with moves of an ant along a tree: from any point of a tree (from the Present Time) there is only one way down (to the Past Time) and there are several ways upwards (in the Future Time). However, for different possible ways to the Future there are doubtless and most probable variants, also there are impossible and almost possible variants. ***The movement to the Future will be especially unstable and power-intensive if the Future Variant is close to the impossible version.*** According to the suggested "law of the top of a tree", the return move is possible only if the traveler in Time does not interfere with occurring events and his way to the Past remained unchanged, otherwise the traveler will return to other parallel Present Time of History on another branch of the tree. The penetration into the Future from the Present is hindered by the choice of a branch, but the return move from any variant of the Future Time to the Present Time is possible regardless as to the behavior of the traveler.

Experiments proved that the Person and Time have a very strong influence on each other. The effect of the operator on experiment is detected, but it has not been investigated completely yet. ***It was found also that harmful effect on biological systems is not related to***

***the process of movement in Time itself but is the result of the difference of the Time rate value in various parts of a body*** (a biological system). Inside of the laboratory setup it was also discovered that Time could be changed with some inertia. Areas of space having different Time rates have vague borders. With sufficient difference in Time rate the human can see an area with a different Time rate as some white mist. Higher the difference – the mist is denser, that can be used as an alarm signal for biological systems. It is possible to consider Time-travel as possible and (after experiments with mice) there are reasons to suppose it will be safe for travelers if they follow certain rules. It is especially necessary to emphasize: the trips through Time (due to new discovered properties of Time) can't affect the Past and they can't change our past history. All the so-called paradoxes for traveler in Time (for example when "he meets himself in the Past" or "he kills his grandfather in his childhood") have clear solutions in 3-dimensional Time.

It is possible to consider as a proven fact that Time has more than one dimension, i.e. O. Bartini's theoretical calculations are confirmed by these experiments: Time has 3 dimensions. Hence our Earth world can be considered as a 6-dimensional object: length, width, height, age or date of the Time, variant of a History or erosion of Time, density or rate of Time. The concept of "the Arrow of Time" as fourth dimension (moment of Time) is a particular case of the concept of sixth dimension (rate of Time) that leads to the physical concepts of gravitation and energy and they are simultaneously connected. Concepts of the "Einstein-Rosen bridges" known since 1916 or "worm-holes" introduced into science by John Willer in the 50's, are travels in 5th and 6th dimensions, i.e. the "classical" Time travels, which were described by H. Wells.

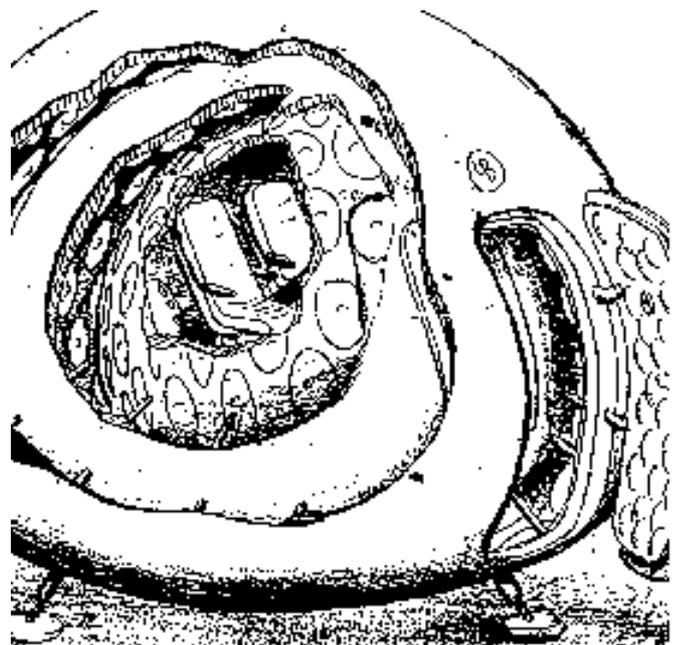


Fig.2  
Plans for future experiments