

outlines the Milky Way in its minor diameter. Such problems necessarily entail a great deal of laborious routine, and can bring final results only after some years of continued research.

The past decade or two have seen the opening of

many doors into the outer world. The present time and the coming decades will bring observational material by which we can fill out the picture of what lies beyond the Milky Way.

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NEWS

MEASURES TO PREVENT UNFAVOURABLE ZERO-GRAVITY EFFECTS

Soviet biologists have proved that zero gravity affects such a fundamental biological process as mitosis—division of cells. It may cause, in particular, restructuring of cells. For the first time, such changes were found in the spiderwort tissues exposed for a long time to spaceflight conditions. Three per cent of the cells under study developed structural changes. In conditions of the earth such phenomena were not observed even after exposure to radiation, vibrations and temperature gaps. The results of research have been corroborated by numerous experiments staged on other objects. This work has been registered as a discovery by the

USSR State Committee for Inventions and Discoveries.

Weightlessness has proved to affect negatively not only mitosis, but cosmonauts also experience unpleasant blood flushes in the head and, in long-duration flights, develop changes in the cardiovascular system and in metabolism. Soviet scientists have developed measures to prevent the unfavourable zero-gravity on living organisms, which extends the time of man's stay in orbit. (*Soviet features*, Vol. 25, No. 137, September 8, 1986; Information Department, USSR Embassy in India, P. B. 241, 25 Barakhamba Road, New Delhi 110 001).

NEW MYSTERIES OF VENUS DISCOVERED

Studying the images of Venus on the radar, transmitted by Soviet interplanetary stations *Venera-15* and *Venera-16*, Soviet scientists unexpectedly discovered a mass of gigantic collision craters having the diameter ranging from 8 to 140 kilometres on the surface of the planet. Many of these formations are 1,000 million years old.

Scientists have established that despite their ancient origin, the condition of all these craters is perfect. They are raised and are seen very well on the photographs. Meanwhile, not a single crater of the kind has remained on the earth as they simply disintegrated as time passed.

It means that in the last 1,000 million years nothing has practically taken place on Venus. Otherwise, the volcanic and tectonic activity would

have left traces. Most probably at the earliest stages of its existence, Venus was more active than the Earth. Possibly, because of the closeness of the sun, all geological processes on it took place more intensively and, as a result, they stopped 1,000 million years ago.

As to the mass of the matter it contains, the densest atmosphere of Venus is equivalent to the layer of rock 300 metres thick. Therefore, traces on its surface could be left only by very big meteorites. For example, to form a crater with a diameter of 140 kilometres the cosmic body should be about 14 kilometres across. (*Soviet features*, Vol. 25, No. 137, September 8, 1986; Information Department, USSR Embassy in India, P. B. 241, Barakhamba Road, New Delhi 110 001).