

65th International Astronautical Congress 2014

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Human Physiology in Space (2)Author: Dr. Oleg Orlov
SSC RF-Institute of Biomedical Problems RAS, Russian Federation, olegtm@bk.ruDr. Oleg Orlov
Institute for Biomedical Problems, Russian Federation, olegtm@bk.ru

BIOMEDICAL SUPPORT OF EXPLORATION MISSIONS AND INTERNATIONAL COOPERATION

Abstract

Recently the interest of the world community to the interplanetary space flights has increased significantly. Despite well-known achievements in the remote exploration of deep space by means of unmanned vehicles, human involvement may expand considerably the field of investigations and help in obtaining of newest unique knowledge. For the day large experience of biomedical support of long-term space flights has been obtained, but it is necessary to acknowledge that biomedical support of interplanetary missions requires the development of new approaches and new tasks decisions. The results of unique analogue studies carried out in the Institute's experimental facility have become important stages in the understanding of the solutions for prolonged SF biomedical problems. The present stage of the manned cosmonautics evolution is characterized by the development of the international cooperation in the exploration of near-Earth environment. IBMP has been engaged in wide-ranging international scientific-technical cooperation with space agencies, research centers, universities, industrial companies and commercial firms in more than 50 countries. The experience of international collaboration in the Realization of scientific biomedical investigations and experiments was gained during the joint Russian/US "Soyuz" and "Apollo" flights (1975), the flights on board "Salyut-6", "Salyut-7" and "Mir" orbital stations, including "Interkosmos" program. Implementation of Russian-US "Mir-Shuttle" and "Mir-NASA" projects has become a demonstrative example of such cooperation and laid a foundation for conducting investigations and experiments on board the ISS, also in the frame of multilateral collaboration. Today most of the business contacts of the Institute representatives with foreign experts are connected with the activities related to the ISS and is implemented through the functioning international bodies. Bilateral work groups on space biology and medicine established together with foreign partners (NASA, ESA, DLR, JAXA, and others) are a flexible instrument for effective and mutually beneficial scientific-technical cooperation. An interplanetary mission will require a thorough preparation on the Earth, numerous theoretical, technological and biomedical researchers, RD, and, in our opinion, consolidation of all international resources: diplomatic, financial, scientific, organizational, and others. Foreseeing major problems we'll face with, IBMP has started the establishment of the Research Center to study biomedical aspects of interplanetary flights and extraterrestrial colonies, and is planning to involve all interested foreign partners to its work and to grant it the international status.