

56th IAA HISTORY OF ASTRONAUTICS SYMPOSIUM (E4)
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TO THE ANNIVERSARY OF THE PHYSICIAN-COSMONAUT VALERY POLYAKOV - THE
RECORDSMAN FOR THE DURATION OF SPACE FLIGHT

Abstract

April 27, 2022 marks the 80th anniversary of the 66th cosmonaut of the USSR and Russia, 210th cosmonaut of the world, Hero of the Soviet Union and Russia, Valery Polyakov. V.V. Polyakov carried out his first spaceflight from August 29, 1988 to April 27, 1989 (240 days 23 hours) as the first cosmonaut-researcher of the Soyuz TM-6 TPK. Dr. Polyakov was directly involved in the medical control and preparation of the crew for the return from orbit after the record-breaking flight at that time. He carried out a large program of biomedical research to improve the system for stabilizing the cosmonauts' health and performance in a long-term spaceflight, and worked out new countermeasures to the adverse effects of weightlessness on the human body. Polyakov made his second spaceflight from January 8, 1994 to March 22, 1995 (437 days 17 hours 58 minutes) - an absolute record duration of work in space for one flight. He took part in flight operations, in work with cargo ships, in medical support for extravehicular activities, in a number of technical and repair work and maintenance of medical equipment, on-board simulators and life support systems of the Mir orbital station. Polyakov carried about 1000 medical research and experiments, including the program of medical control and observation and scientific biomedical experiments (studies of the cardiovascular and respiratory systems, gastrointestinal tract and motor sphere, psycho-neurological, immunological, hematological, biochemical, anthropometric and sanitary-hygienic studies). Unique medical onboard equipment was used. The main results of the implementation of the doctor's super-long flight program were proof of the possibility of maintaining the health and working capacity in a long flight; improvement of the medical support system for long-term spaceflight and the medical safety of the main crews working on orbital complex, maintaining high body reserves, as well as ensuring the necessary sanitary and hygienic conditions at the Mir complex. The data accumulated during the implementation of the program allowed to expand the transfer of used medical devices and methods for their subsequent use in health and environmental medicine. Dr. Polyakov is the author of more than 50 domestic and foreign publications devoted to the problems of space medicine and biology. He is a member of the Association of Space Explorers, a full member of the International Academy of Astronautics and the Russian Academy of Cosmonautics named after K.E. Tsiolkovsky. He has a large number of Russian and international awards.