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LEONID KADENYUK – THE FIRST UKRAINIAN COSMONAUT

The theory and practice of navigation beyond Earth's atmosphere need a certain degree of technology and financing but aeronautics development makes good state image. After Ukrainian independence declaring one of the most important aims of the new state was to show the world its high level of science and technologies development, capacity to take part in international space cooperation. The goal of this work is to investigate the personality of the first Ukrainian cosmonaut – Leonid Kadenyuk.

Leonid Kadenyuk was born on 28 January 1951 in the Chernivtsi region of Ukraine. He graduated from the Chernihiv Higher Aviation School in 1971, from GNIKI VVS USSR (State Scientific Research Institute of the Russian Air Forces Center for test pilot training) in 1977, and the Yuri Gagarin Cosmonaut Training

Center in 1978. He earned a master of science in mechanical engineering from the Moscow Aviation Institute, Department of Aircraft Construction in 1989. L. Kadenyuk has been a member of the USSR Cosmonaut Team since 1976. In 1990, following the Ukrainian-USSR State Agreement on a Collaborative Space Program, he was appointed to command the Ukrainian space crew. L. Kadenyuk is one of the first NSAU Astronaut group selected in 1996 by the National Space Agency of Ukraine. In November 1996, NSAU and NASA assigned him to be one of two payload specialists for the Collaborative Ukrainian Experiment (CUE) which was flown on STS-87. He participated in payload specialist training at the Johnson Space Center and was the prime payload specialist aboard Space Shuttle Columbia on STS-87 (from November 19 to December 5, 1997). STS-87 was the fourth United States Microgravity Payload flight and focused on experiments designed to study how the weightless environment of space affects various physical processes, and on observations of the Sun's outer atmospheric layers. Two members of the crew performed an EVA (spacewalk) which featured the manual capture of a Spartan satellite, in addition to testing EVA tools and procedures for future Space Station assembly. In completing his first mission L. Kadenyuk orbited the Earth 252 times, traveled 6.5 million miles and logged a total of 15 days, 16 hours and 34 minutes in space. For the first time, the Tryzub and Ukrainian flag visited the space, and the anthem of the independent Ukraine was sounded during the flight of L. Kadenyuk. Besides the joint Ukrainian-American experiment in space flight L. Kadenyuk carried out experiments for the Institute of Human Systems Research by the topics «Man and weightlessness». Conclusively, there is no longer any doubt that humans can both survive in space and work hard and productively in this exotic environment for periods of many months. A sizable number of biological responses to weightlessness do take place fairly promptly but are reversible when the space traveler resumes his or her accustomed place on the surface of the Earth. Yet it is equally clear that some of the adjustments are slow and do not reach equilibrium even after many months of weightlessness. There also is concern that a few of these processes, if allowed to go on long enough, may produce irreversible changes. This could be particularly worrisome when older individuals or persons in different physical condition from the astronauts travel into space. Many scientists are seeking to detect, to understand, and ultimately to prevent these changes, so that long voyages into space will be both safe and feasible. Today, however, from the vantage point of twenty years of space flight operations,

many thousands of hours of flight experience, more than one hundred astronauts and cosmonauts, and many other living creatures, no such barrier is in view. L. Kadenyuk is inspired with talented gift of humanity.