44th HISTORY OF ASTRONAUTICS SYMPOSIUM (E4)
History of Contributions to Astronautics of former Czechoslovakia (4)

Author: Mr. Frantisek Hruska
Institute of Atmospheric Physics, Czech Republic

Mr. Pavel Triska
Czech Academy of Sciences, Czech Republic
Mr. Jaroslav Vojta
Institute of Atmospheric Physics, Czech Republic

A BRIEF HISTORY OF THE DEVELOPMENT OF SCIENTIFIC INSTRUMENTS FOR IONOSPHERIC AND MAGNETOSPHERIC RESEARCH, MAGION SATELLITES

Abstract

A brief history of the development of scientific instruments for the ionospheric and magnetospheric research at the Geophysical Institute and Institute of Atmospheric Physics is presented. Ionospheric research started at the Geophysical institute in middle fifties, when the ionospheric department was founded. The International geophysical year further accelerated the ionospheric research and started the research of the plasmasphere based on regular registration of whistlers and also the regular ionosphere sounding which continues till now. The sixties brought the first chance to exploit satellite data. The establishment of Intercosmos in 1967 was a great opportunity to take part in space research and to build own scientific instruments for in-situ measurement. During seventies and eighties more than 20 instruments were realized including the participation on the big projects like Vega and Intershock. This great period culminated by the five Magion satellite series. The first one was launched in 1978 having 14.5kg and two scientific experiments. The last one, Magion 5, with 68.5kg carried 15 scientific instruments from 7 countries. All five satellites were launched as a piggyback together with a bigger mother satellite equipped with similar scientific payload to distinguish the space-temporal structures of the Earth's plasma. Magion satellites were built at the Ionospheric department of the Geophysical institute transformed to the Upper atmosphere department of the Institute of atmospheric physics in 1994. All satellites were operated from own telemetry and command station Panska Ves (5032' N, 1434'E). This allowed a great flexibility and interactivity of the scientific experiments. On the ground of the scientific data from the Magion satellites more than 100 papers were published and scientists have been using Magion data till now. Space research at the Institute of Atmospheric Physics continues and is traditionally focused to the research of the Earth's space environment and space physics. The rich history on this field is a good basis for our current and future space activities.