

HIGH RESOLUTION SPECTROSCOPY IN THE UV DOMAIN

M. Sachkov

*Institute of Astronomy of the Russian Academy of Sciences,
Pyatnitskaya 48, 119017 Moscow, Russia
E-mail: msachkov@inasan.ru*

Ultraviolet spectroscopy has a significant impact on studies of the physical characteristics of planets, stars, galaxies and interstellar and intergalactic matter. The UV domain is of special interest for astronomers since it is here that we find the resonance lines of the most abundant atoms and ions in plasmas with temperatures between 3000 K and 300,000 K as well as the most abundant molecules – H_2 , CO , $OHCS$, S_2 , CO_2^+ , C_2 , and many others. The UV range is not accessible from the ground. Progress in the field therefore depends upon development of space-based instrumentation. The number of short term experiments and long term observatories designed for observation in UV domain exceeds 60. The most powerful observatory ever flown, the *Hubble Space Telescope* is expected to operate till 2016-2017. In late 2016 the *World Space Observatory - Ultraviolet* mission will be flown. This will guarantee access to the UV Universe for the next decade. Some amazing scientific results are presented in this lecture as well as instrumentation limitation for UV observations and challenges that UV missions meet.