The activities of ***the Astronomical Institute of the Slovak Academy of Sciences (AISAS)***, Tatranská Lomnica (*www.astro.sk*), related to COSPAR, were devoted to research in solar and stellar physics using different satellite observations, mainly in the UV, XUV and X-ray spectral regions. Stellar data of the IUE, FUSE, INTEGRAL, XMM-Newton, Kepler satellites, and the HST were used for research of various variable stars [1-6]. Data of the current SOHO mission, Hinode, SDO, and RHESSI satellites were used for solar research mostly focused on solar prominences [7-11]. Hereby we present an example of the results obtained by the AISAS staff, information on an education activity of the AISAS and information on the WAMIS proposal cooperation [12,13].

Within the research of the stellar astrophysics, we used observations carried out with the space observatories, the Far Ultraviolet Spectroscopic Explorer (FUSE), Hubble Space Telescope (HST), International Ultraviolet Explorer (IUE) and X-ray Multi-Mirror Mission (XMM-Newton) to model the spectral energy distribution (SED) of supersoft X-ray sources (SSS). On the basis of these observations we developed a method of multiwavelength modelling the SED of SSSs (Fig.1). We showed that the multiwavelength approach overcomes the problem of the mutual dependence between the temperature, luminosity and amount of absorption, which appears when only the X-ray data are fitted. Thus, the method provides an unambiguous solution. It is essential in determining physical parameters of SSSs [1]. Application of the method to the recurrent symbiotic nova RS Oph showed that the luminosity of this object was super-Eddington during the whole outburst – from the explosion to the end of the supersoft X-ray phase. This required a high accretion rate from the surrounding disk resulting in the ejection of collimated high-velocity mass outflow. The high accretion rate could be a result of a focusing the wind from the cool giant in RS Oph towards the orbital plane. This then allowed the white dwarf to accere the wind at very high rate [2,3].

The Astronomical Institute organised in the year 2014 the lecture course – Magnetohydrodynamics in astrophysics - given for the undergraduate and PhD students from Slovakia by Dr. Petr Jelínek of the Institute of Physics and Biophysics (Faculty of Science, University of South Bohemia, České Budějovice, Czech republic) on August 18-22, 2014 at AISAS at Tatranska Lomnica. The course of lectures provided insights to basic plasma physics, motion of charged particles in the magnetic field, cosmic electrodynamics, fluid description of plasma, magnetohydrodynamics, oscillations and waves in

plasma, magnetoacoustic waves in plasma, plasma in astrophysics, MHD dynamo, solar wind, cosmic rays and to reconnection of the magnetic field. More details about the course of lectures can be found at the dedicated web page - *https://www.ta3.sk/~koza/mhd/mhd.htm*.

In the years 2014-2015 AISAS has become involved in the proposal which has been submitted twice for consideration of an award by NASA (NASA H-TIDeS LCAS program). The proposal called "Waves and Magnetism in the Solar Atmosphere (WAMIS)" is led by Yuan-Kuen Ko (Naval Research Lab, Washington, USA) (PI), and its AISAS part by J. Rybak (Co-I). The team has received a negative agency decision due to NASA budget limitations although the proposal has been ranked high. The project is a long duration balloon based 20cm aperture coronagraph designed to obtain continuous measurements of the strength and direction of coronal magnetic fields within a large field-of-view over at least weeks at the spatial and temporal resolutions required to address several outstanding problems in coronal physics [12,13]. The WAMIS investigation, comprising a balloon-borne infra-red coronagraph and polarimeter to observe Fe XIII forbidden transitions and the He I line, should enable breakthrough science and enhance the value of data collected by other observatories on the ground (e.g. ATST, FASR, SOLIS, COSMO) and in space (e.g. Hinode, STEREO, SDO, SOHO and IRIS), and will advance technology for a future orbital missions.

Besides of this, the AISAS staff was involved (or leading) in the last two years in total 4 coordinated observing campaigns focused on observations of several aspects of the solar activity. The integral part of the campaigns were also measurements performed by the space-born instruments on different satellites, e.g. SUMER/SoHO, EIS/Hinode. The measurements were coordinated with the ground-based instruments including the AISAS owned CoMP-S instrument at the Lomnicky Peak Observatory.

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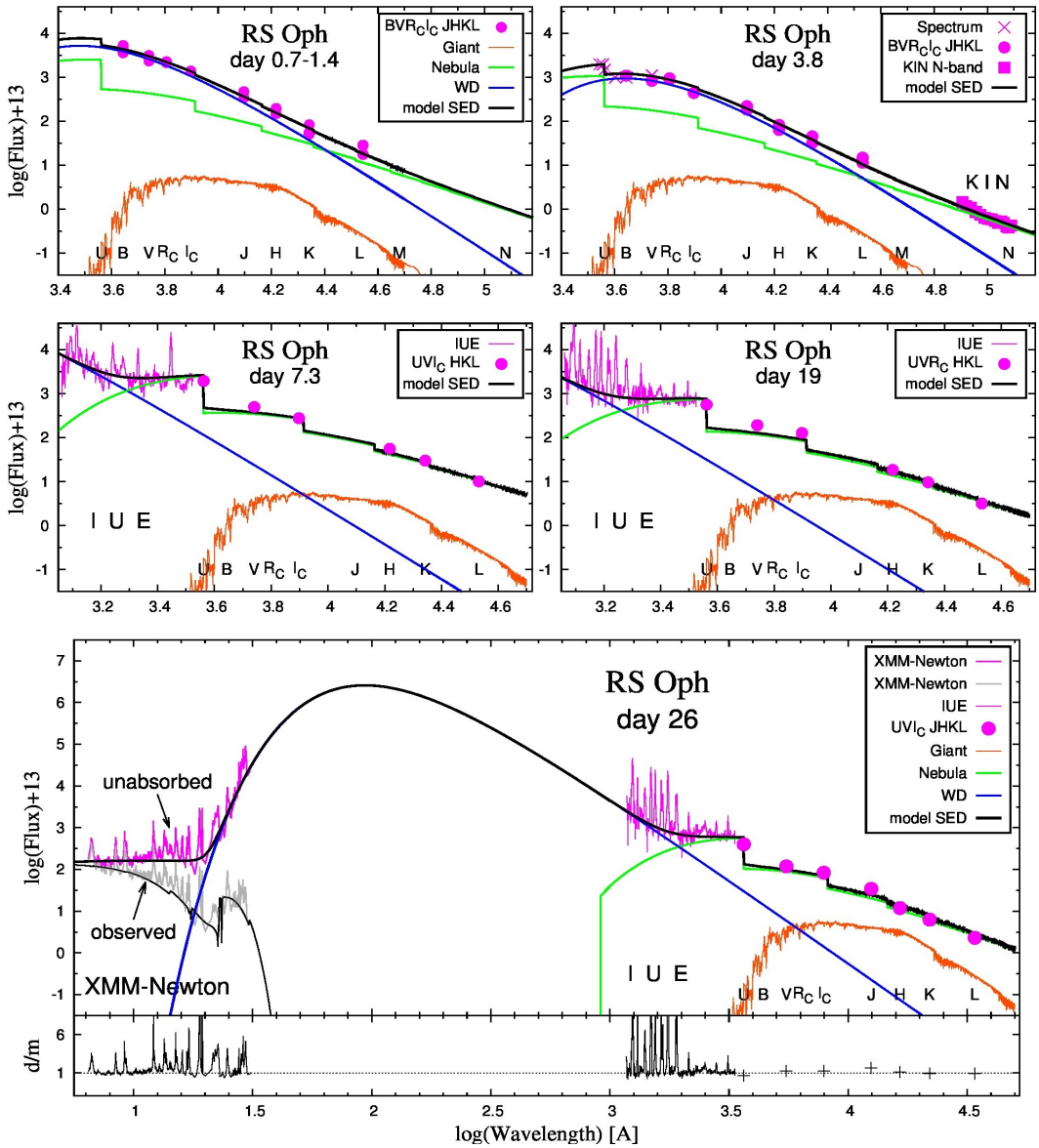

Figure 1. A comparison of the measured SED (in magenta) and model SED (black solid line) of RS Oph from day 1 after its explosion to day 26. Data-to-model ratios (d/m) are plotted for the day-26 SED to judge the reliability of the fit. The blue, green and orange lines denote components of radiation from the SSS, nebula and giant, respectively. Fluxes are in units erg s^{-1} cm^{-2} A^{-1} .