

## **Eva Arazimová: Spektroskopické studium bílých trpaslíků**

The aim of the first part of her thesis was to obtain a general overview of white dwarf stars, including the physics associated with the structure and evolution of white dwarfs, the various classification classes and their contribution toward our understanding of the nearby neighbourhood of stars.

The second area of her project was to conduct a population study of a selected sample of white dwarf stars. These white dwarfs were selected from the revised New Luyten Two Tenths (rNLTT) catalog using proper motion and photometric colours as the selection criteria. For approximately half of this sample, accurate temperatures and surface gravities were extracted from the literature. Atmospheric parameters (effective temperature and surface gravity) for an additional 76 stars (out of which 64 were previously unknown white dwarfs) were obtained using spectral analyses techniques. In the case of the hydrogen-rich (DA) white dwarfs, the effective temperature and surface gravities were obtained by fitting the observed Balmer line profiles to synthetic spectra. For the non-DA white dwarfs, effective temperatures were estimated by comparing the spectral energy distribution to a black body spectrum.

The next step in the project was to obtain mass, cooling age and distance estimates for the sample of white dwarfs. These were obtained using published mass-radius relations. Finally, space velocities for the sample of white dwarfs were calculated. The results from the individual stars were grouped to build temperature and mass distributions. The space velocities were compared to the predicted thin-disk, thick-disk and halo.

This project presents several new data and analyses, along with the discovery of a number of interesting objects. An article containing these results will be prepared and submitted to a refereed journal.

During her masters studies, Eva was introduced to the challenges encountered in the studies of white dwarf stars. She is a conscientious student who showed great interest in this field of research. During her studies, Eva was able to grasp the required techniques that were necessary to complete her project. She also displayed that she is capable of working on her own. Eva presented her work clearly and eloquently and is worthy of being awarded a Mgr. degree.

Známka: výborně

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Adéla Kawka