NEW VERSION OF SPECTRAVIEW FOR SPECTRA ANALYSIS

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Abstract: This article presents a new version of the program SpectraView (SV2). This version is equipped with new user interface and other features unavailable in its previous versions. It has also been created using modern programming language and is now compatible with the latest operating systems. The program has been tested on the observations of the four short-period variable stars.

1. INTRODUCTION

The article presents a new version of the program for 2D visualization of star spectra obtained in Rozhen NAO. The aim is to convert one-dimensional arrays into two-dimensional images with the possibility of adjusting the degree of gray. This allows us to visualize the curves of the radial velocities and to determine their half-amplitudes even more precisely. As known in astronomy, spectral observations are the only source of information on the masses of the stars. The program, object of the present work, aims to facilitate the analysis of the obtained radial velocity curves. The program has been tested on the observations of the stars NSVS 254037, TYC3621-711, ASAS J102556+2049,3 and NSVS 2569022.

2. DISCUSSION

The first two stars, that had been test objects of the initial version of the program, (Marchev and all, 2018), are presented with inverted graphics here – Fig.1 and Fig.2. This and the possibility to export the final images in different file

formats are new functions of the program. Figures 3 and 4 show the converted images for the third and fourth stars respectively. Unfortunately due to the limits of the program version of MATLAB that we use, we are unable to make an EXE file version of the program. Source code and help file can be found at: http://astro.shu-bg.net/spectraview.zip . We are going to move to a newer version of the MATLAB program (R2016a), that allows us to achieve more functionality and better program interface. With the new version we are going to achieve much better visualization of the fitting procedures using the code of Snyder, L. F., 2001.
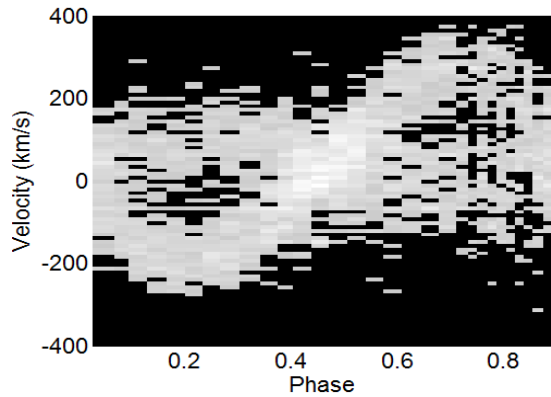

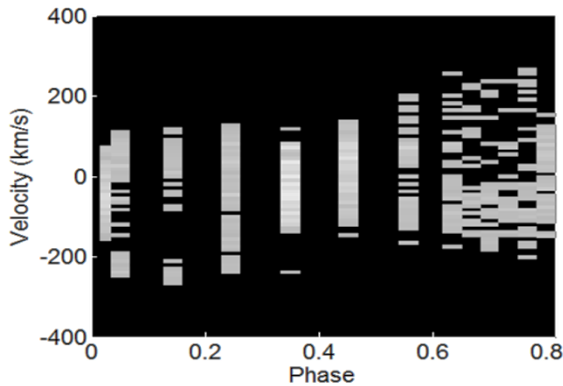**Figure 1:** The star NSVS 254037 (negative conversion).
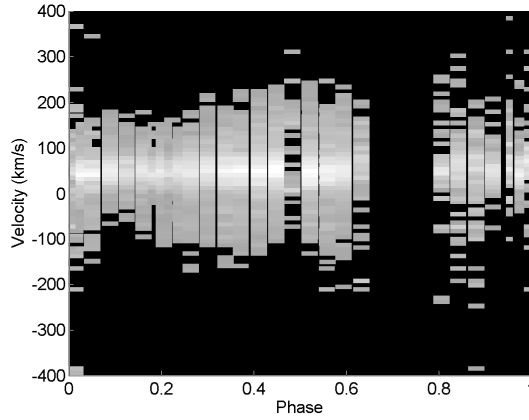

Figure 2: The star TYC3621-711.

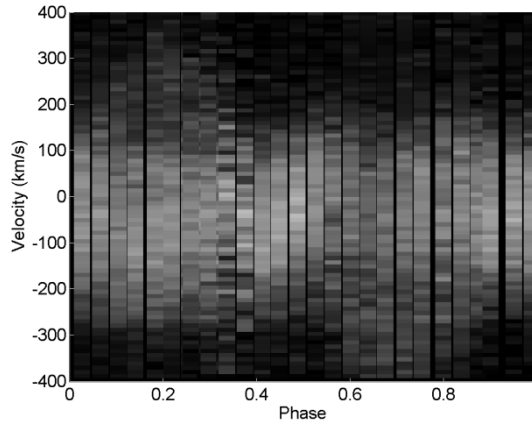**Figure 3:** The star NSVS 2569022 (negative conversion).

Figure 4: The star ASAS J102556.

Acknowledgements

References

Marchev, D.,V., and al.: 2018, "SpectraView 1.0 – 2D visualization of stellar spectra", *Acta Scientifica Naturalis*, **5(1)**, 35-39,

Snyder, L. F.: 2001, "Binary Maker 2.0 Light Curve Synthesis Program", *International Amateur-Professional Photoelectric Photometry Communication*, **83**, 25-33.