

Preliminary results of Low Resolution Spectroscopy of some selected stellar objects using a DSLR camera

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Properties of distant stars and galaxies such as their chemical composition, temperature, density, mass, distance, luminosity, and relative motion using Doppler shift measurements can be studied using their spectroscopy. Spectra of some selected stellar objects were obtained utilizing a grating and a Digital Single Lens-Reflex (DSLR) camera in this research. Canon EOS 6D DSLR camera with a telephoto lens was used as the recording device and 300 lines per millimeter grating mounted in front of the lens was used to generate the spectra. Spectra of planets Jupiter, Mars and stars Betelgeuse and Vega were photographed. Star Vega which is a type A star was used as the reference to calibrate the spectra of the other stellar objects. A software package IRIS was used to reduce the obtained images and the reduced images were analyzed using a spectrum analyzing software VisualSpec (Vspec). Characteristics of the obtained spectra were compared with the standard spectra. Results were obtained using an analysis of low resolution spectra and the Hydrogen absorption lines, H_{α} , H_{β} , H_{γ} and H_{δ} were identified in the study.

Keywords: DSLR camera, Grating, IRIS, Vspec

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