



Iranian Journal of Physics Research, Vol. 17, No. 4, 2017

Designing and manufacturing of a solar imaging and tracking system for research and spectroscopy applications

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(Received 07 March 2016 ; in final form 10 December 2016)

Abstract

In this study, designing and manufacturing of solar imaging and tracking system for research and spectroscopy applications are investigated for the first time in Iran, under the supervision of Adib astronomy center of Isfahan. The device has the ability to be used as a telescope, spectroscope, spectrophotometer and spectroheliometer and shows acceptable efficiency in evaluations. The results obtained from this device used in various field of research such as investigating absorption spectra of the sun surface, studying the transit of planets in front of the sun, perusing Doppler effects, evaluation of the Fraunhofer lines, plotting of intensity versus wavelength and studying of solar flares have close conformity with theoretical expectations. In this research, the design and manufacture of the device, along with some of the results, are reported.

Keywords: Doppler effects, Fraunhofer lines, absorption spectra

For full article, refer to the Persian section