Level: bachelor

Course title: Instruments and Methods of Astronomical Observations

Status: obligatory

ECTS: 4

Requirements:

Learning objectives

The goal of this course is to, within the theoretical and practical exercises provide students with sufficient knowledge about instruments that are used in observational astronomy for collecting information coming from celestial bodies. In addition, to provide students with basic methods used in the observations.

Learning outcomes

Acquiring knowledge of the observational instruments and methods for collecting the relevant information carriers, which originate from celestial bodies.

Syllabus

Theoretical instruction

Theoretical part of the course deals with the specifics of astronomical observations, the properties of information carriers and the impact of medium between the observer and the observed celestial body on the properties of information carriers. The first part of the lectures studies in detail collectors of information carriers. Types of optical and mechanical installations of telescopes are considered. This is followed by analyzers and detectors of information carriers. The second part of the lectures deals with the methods of observation, and is used to overcome ways of how to prepare for the observations. In the end of theoretical part, various photometric, polarimetric and spectroscopic methods are studied in order to gain specific characteristics of celestial bodies (such as temperatures, dimensions of star, masses, radial velocities etc.).

Practical instruction

Through various examples and tasks in the practical part of the lectures, all features of observational instruments that are important in observational practice: efficiency of collecting information carriers, spatial buffer power, spectral buffer power etc. are shown. Specific examples of observations are used to solve tasks of finding celestial bodies at a given moment and in a given place of observation. Using virtual observatory complete procedure of photometric and spectroscopic observations of stars can be done. Astronomical Observatory of Belgrade performs spectroscopic observations of the Sun in the visible and infrared part of the electromagnetic spectrum.

Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	