

Mgr. Jan Štrobl: CCD sky surveys: statistika a klasifikace.

Abstract:

This diploma thesis is focused on the automatic processing of data from wide-field robotic optical telescopes, which are often operated as automated "survey" systems. The problems of using CCD detectors are reviewed, together with those of calibrating and reducing the data, and converting photometric information to standard photometric systems.

The objective of this thesis was to acquire sample data from an existing wide-field telescope, to find and test a method of automatic data-reduction, and also to try to analyze and use the results. Long-term observational data was obtained on two specific fields from the ROTSE project, and data reduction and processing was carried out with a custom-written pipeline based on a modified version of "munipack". A photometric calibration was obtained and information about several variable stars of different types was extracted from the reduced data. Both the calibration method and results are discussed.