

Invited lecture

**SCANNING MOSCOW PLATE COLLECTION: PROGRAM,
ELECTRONIC CATALOGS, AND NEW VARIABLE STARS
IN THE FIELD OF 104 HERITLÉ**

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Astronomical plate archives contain a wealth of information about changes in positions and brightness of celestial objects on timescales of decades and are useful as the first epoch for comparison with modern-day observations. We describe the astronomical plate collection of the Sternberg Astronomical Institute (Lomonosov Moscow University) and the program of its digitization using high-resolution scanners. The program is focused on the search for new variable stars. After scanning all plates for a given plate center, we perform source extraction, photometric/astrometric calibration and construct light curves of all objects in the field using a custom-made pipeline based on open-source software. Variable stars identification is performed by running a period search on the constructed light curves followed by human-eye inspection of identified candidates. Only a small part of the plate collection has been digitized so far. We present the recently obtained results for a field in Hercules with the center at 104 Her (18h11m54.2s +31d24'19", 2000.0). About 300 new variable stars have been discovered, some of them showing unusual features. The most interesting variables we found will be discussed in our talk. Access to plate logs of the scanned parts of our collection is provided; interested users can get access to plate scans they need upon request. We will incorporate the corresponding plate logs into WFPDB.