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PHOTOMETRYPIPELINE: An automated pipeline for calibrated photometry

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PHOTOMETRYPIPELINE (PP) is an automated pipeline that produces calibrated photometry from imaging data through image registration, aperture photometry, photometric calibration, and target identification with only minimal human interaction. PP utilizes the widely used Source Extractor software for source identification and aperture photometry; SCAMP is used for image registration. Both image registration and photometric calibration are based on matching field stars with star catalogs, requiring catalog coverage of the respective field. A number of different astrometric and photometric catalogs can be queried online. Relying on a sufficient number of background stars for image registration and photometric calibration, PP is well-suited to analyze data from small to medium-sized telescopes. Calibrated magnitudes obtained by PP are typically accurate within <0.03 mag and astrometric accuracies are of the order of 0.3 arcsec relative to the catalogs used in the registration. The pipeline consists of an open-source software suite written in Python, can be run on Unix-based systems on a simple desktop machine, and is capable of realtime data analysis. PP has been developed for observations of moving targets, but can be used for analyzing point source observations of any kind. I will present the pipeline's implementation and discuss some current and future features.

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