

Poster at Splinter Meeting

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FIRST STEPS TOWARDS A PHOTOMETRIC ANALYSIS OF THE
SONNEBERG SKY PATROL PLATES

M. Spasovic¹, C. Dersch¹, A. Schrimpf¹, P. Kroll²

¹*Philipps-Universitaet Marburg, Fachbereich Physik, D-35032 Marburg, Germany*

²*Sternwarte Sonneberg, Sternwartenstrasse 32, D-96515, Sonneberg, Germany*

The Sonneberg Plate Archive is one of the largest in the world, with about 270 000 photographic plates taken mainly at Sonneberg Observatory between 1925 and 1997. Photometric observations were divided into two programs:

- Field Patrol monitoring of about 80 selected fields of the sky at high resolution in the range of $2''/\text{pixel}$
- Sky Patrol monitoring of entire sky of the northern hemisphere with wide angle cameras at lower resolution of roughly $17''/\text{pixel}$.

Up to the present almost all photometric measurements on photographic plates were done by aperture photometry or methods similar to aperture photometry. As aperture photometry for a field patrol plate seems to be of sufficient quality, the photometric analysis of sky patrol plates appears to be more demanding due to overlapping star images because of the smaller resolution.

Early works on the sky patrol plates showed that photometric accuracy can be enhanced with fitting algorithms. The used procedure was a manually supported click-and-fit-routine, not suitable for automatic analysis of vast amount of photographic plates. We will present our progress on deconvolution of overlapping sources on the plates and compare photometric analysis using different methods. Our goal is to get light curves of sufficient quality from sky patrol plates, which can be classified with machine learning algorithms.