

# Master Thesis



**Topic:** Lucky Imaging of Solar System Planets and Stars in the Milkyway

**Start:** Any Time

**Where:** at MPIA, Dept of Planet and Star Formation

**Advisors:** Stefan Hippler and Wolfgang Brandner

**Intro:** Lucky imaging is a kind of video astronomy that combines 2 methods of image processing: selection of the sharpest images within a video sequence and stacking these images using a common center (shift-and-add method).

**Aim:** The lucky imaging technique can be applied to point-like objects as well as extended objects. One goal of this work is to apply the lucky imaging method to solar system planets like Jupiter or Saturn. Another topic is centered around High-efficiency lucky imaging.

**Tools to use, papers to start with:**

Image processing with ImageJ,

see for example <http://www.astro.physik.uni-goettingen.de/~hessman/ImageJ/Book/titlepage.html>

Jennifer L. West and Ian D. Cameron, Using the Medical Image-Processing Package, ImageJ, for Astronomy, Journal of the Royal Astronomical Society of Canada, Vol. 100, No. 6, p.242 (2006).

High-efficiency lucky imaging, MNRAS 432, p.702 (2013).