

Exercise Lab 1

AST443, Lecture 6

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Administrative

- **Project 1:**
 - code IDL algorithms to
 - generate a master dark and bias frame from a series of darks of a range of exposures
 - generate a master flat field frame from a series of flats with a range of exposure intensities
 - generate a master bad-pixel mask (1 = bad, 0 = good) based on the above
 - problem 2.2 in Wall & Jenkins, including the “extra challenge”
 - one-paragraph description of an idea for observational project
 - **due in class on Wednesday, Sep 23**
- Reading:
 - chapters 4–5 of Howell: CCD data reduction and photometry
 - chapters 3–5 of Wall & Jenkins: statistics, correlations, hypothesis testing
 - overview paper on IR arrays (Rieke, G. 2007, ARA&A, 45, 77)
 - <http://arjournals.annualreviews.org/doi/full/10.1146/annurev.astro.44.051905.092436>

Administrative (cont.)

- **Think of observing proposals**
 - 10 hours on Tenagra Observatories 32"
 - <http://www.tenagraobservatories.com/>
- **Possible directions:**
 - detecting the eclipse signal of transiting hot Jupiters
 - determine orbital period and size of planet
 - determine surface temperature
 - a color-magnitude diagram and age estimation of a globular or open cluster
 - astrometric monitoring of a binary object
 - nearby fast-moving star
 - binary asteroid in the solar system
 - etc.