Homework 9

Due Date/Time: Beginning of class (7 pm), Wednesday, November 15th 2017

1. Combine the following functions (modify code you wrote to be in functional form where necessary) into a Python module. All functions should be generic so that that things like wavelength, file paths, file names, etc. are functional inputs and not hard coded:
    a. Your master bias and dark generation functions from Lab 6
    b. Your flat field generation function from Homework 6
    c. Your function to bias and dark subtract raw data frames and divide by a flat field, also from Homework 6
    d. Your centroid/offset calculation function from Homework 7
    e. Your image registration function from Homework 8

If you're unfamiliar with python modules, download the file Exercise3.zip from the github repository Homework9 directory for an introduction.

2. Once you have the module together, you should be able to simply import it into a jupyter notebook and run through the whole sequence of reduction steps (a-e) in one line each (e.g. in the form modulename.func(input1, input2, opt1='R')) for the Smith M52 data that you've been working on for the past few weeks. Print or display the output of each function as a sanity check as you go.

You should submit a single python module file and a single Jupyter notebook, zipped together, to Moodle. No need to resubmit the data files we've given you, however make sure that your code runs without having to rearrange folders, etc. relative to what we've given you.

Pre-Lab Reading and Questions for Week 10

Reading

Please read the following sections in Chromey:

- 10.1 - *(Photometry Introduction)* through 10.5 *(Absorption by the Atmosphere)*

Reading Questions

1. Describe in your own words the basic purpose of aperture photometry.

2. Describe the step-by-step process that leads to photometrically-calibrated images.
3. Write down three important/main points from this week's reading.
4. What concepts did you find unclear in this week's reading?