

Please Join Us For E96B: Intro to Astro Photography

Spring 2018



E96B, offered through the Henry Samueli School of Engineering, introduces students to the basic principles of photography and its applications to imaging objects in space. The course covers the history of imaging from the pinhole camera to the basics of charged coupled devices (CCDs) to complementary metal-oxide semiconductor (CMOS) imagers.

The course aims to have students familiarize themselves with astro-photography via hands on experience.

Students will work with actual CCDs and CMOS imagers along with a variety of telescopes we have available. The images above were actually taken by one of our former students with a color CCD imager with a telescope.

No prior knowledge of engineering is required and is open to all students regardless of department.

There are no tests just a final presentation and report for the group project. The course will count for an elective credit.



Image Source: https://en.wikipedia.org/wiki/Meade_ETX_telescope

Sample Project Ideas

Choose one of the following project ideas, or you may come up with your own project idea that involves a CCD/CMOS camera. You will be turning in a final report for your project as well as give an oral presentation at the end of this quarter.

1. Celestial Imaging

This project you will be imaging any object in space of your choosing. Students in the past have imaged the sun, moon, or a variety of star clusters and galaxies. We will provide special filters to accentuate certain features of these objects and you may use a variety of image processing techniques to improve image quality.

2. Image Improvement

In this project, you will be working to improve images using the AIP4WIN software (or software of your own choice). Your task would be to take images using the cameras given to capture images and improve them. Using the Histogram, Gamma, Math function, Black/White Cutoff, Exposure Time when taking pictures.

3. Pinhole Camera Creation!

In this project, you will be creating your very own pinhole camera using limited tools. Use your pinhole camera to take pictures. Try to physically improve your pinhole camera.

4. RGB/CMY Pictures!

In this project, you will be using the Red, Green, Blue or Cyan, Magenta, Yellow color filter to take picture of an item and compare these images. You can create your color images with use of special filters and a black and white camera.

5. Long Term Exposure and the Effects of Leakage and Temperature

In this project, you will take long term exposure pictures and explore the effects of leakage and temperature in the CCD camera to the image produced.

Please contact Prof. Oscar Stafsudd

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If there are any questions.