Ay121: Undergraduate Radio Lab

UC Berkeley, Spring 2014

This course consists of four laboratory experiments that concentrate on radio instrumentation and laboratory techniques. We will build receiving, observing, and data analysis systems for two telescopes: a single-dish 21-cm line system, and a 12-GHz interferometer. We will use these telescopes for astronomical observing projects including structure of the Milky Way galaxy, precise position measurement of several radio sources, and measurement of the radio brightness distributions of the sun and moon with high angular resolution. There is a heavy emphasis on digital data acquisition, software development in the Python language, and high-quality written reports.

Prof. Aaron Parsons

Classes: Tu 6:00 - 9:00p, Hearst Field Annex D-23

Email: [aparsons@berkeley.edu](mailto:aparsons@berkeley.edu)

Office: Hearst Field Annex B-54

Quizzes (30% of grade):

* intended to be easy, if you’ve done the reading/watched the videos
* given at beginning of class
* ensure you are keeping up on assigned reading/video lectures

Lab Reports (70%):

* due every 4 weeks (except lab 1, which is 3 weeks long)
* due **Monday** at 5pm by email
* -10% for each day late
* collaborate (talk, draw pictures) with your labmates …
* … but implement separately (your own equations, code, plots, reports)

Reading:

* most material provided on the AstroBaki website (<http://casper.berkeley.edu/astrobaki>) Ay250 P9ls4R\*@

Materials:

* you may use department computers, but you are encouraged to use your own laptop. We can help you get the necessary packages installed.
* lab book for notes, recording data, etc.

Schedule:

* See class website (AstroBaki, Undergraduate Radio Lab)
* NO CLASS 3/25