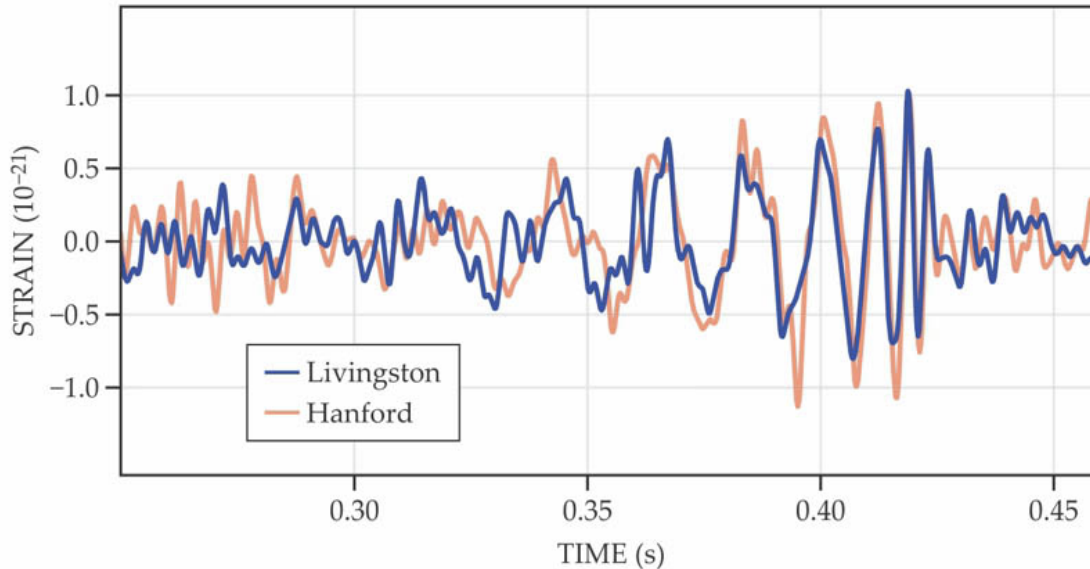


Sp19 - PRACTICAL INTRO TO RESEARCH (46650)

[Jump to Today](#) [Edit](#)

Classes: TTH 12:30-2:00 in PMA (RLM) 15.201

Instructor: [Karl Gebhardt](http://www.as.utexas.edu/~gebhardt/index.html) (<http://www.as.utexas.edu/~gebhardt/index.html>)

Office: PMA (RLM) 15.224

Office Hours: W 1-2, or by appointment or just drop in anytime

Office Telephone: 471-1473

Email: gebhardt@astro.as.utexas.edu
(<mailto:gebhardt@astro.as.utexas.edu>)

Teaching Assistant: [Andrew Leung](mailto:leung@astro.as.utexas.edu) (<mailto:leung@astro.as.utexas.edu>)

Office Hours: Mon 2-3,
RLM 16.212

Please see the list of Projects soon.

The goal of this course is to give you the skills to become excellent researchers. It will focus on data analysis, making presentations and plots, good coding practices, using on-line material, and data mining. Coming out of the class, you should be attractive to researchers in

the university as well as learning important skills for non-academic paths. Much of the coding will be based on Python.

No textbook is required. Much of the relevant material will be articles that are available on the internet, so access to the internet is important. Lectures, along with many articles from the internet, will be provided online. I will add websites to the lists below during the semester.

GRADING:

The students final grade will consists of:

40% homework

35% project

25% in-class activities and class participation

General Resources

[list of text editors](#) 

[astropy tutorials](http://www.astropy.org/astropy-tutorials/FITS-images.html) (<http://www.astropy.org/astropy-tutorials/FITS-images.html>)

[Python tutorial](https://cscircles.cemc.uwaterloo.ca) (<https://cscircles.cemc.uwaterloo.ca>)

[Linux tutorials](http://www.ee.surrey.ac.uk/Teaching/Unix) (<http://www.ee.surrey.ac.uk/Teaching/Unix>)

[SciPy](https://www.scipy.org/) (<https://www.scipy.org/>)

[NASA](http://www.nasa.gov) (<http://www.nasa.gov>)

[NED](https://ned.ipac.caltech.edu) (<https://ned.ipac.caltech.edu>)

[GAIA](http://sci.esa.int/gaia) (<http://sci.esa.int/gaia>)

[Picture of the Day](http://antwrp.gsfc.nasa.gov/apod/astropix.html) (<http://antwrp.gsfc.nasa.gov/apod/astropix.html>)

[Space Weather](http://spaceweather.com/) (<http://spaceweather.com/>)

[Astro-ph](http://arxiv.org/list/astro-ph/new) (<http://arxiv.org/list/astro-ph/new>)

[NASA Watch](http://www.nasawatch.com) (<http://www.nasawatch.com>)

[RC3 Galaxy Images](http://cosmo.nyu.edu/hogg/rc3/) (<http://cosmo.nyu.edu/hogg/rc3/>)

[Strassler's page](http://profmattstrassler.com/) (<http://profmattstrassler.com/>)

[O'Connell's ccd page](http://www.faculty.virginia.edu/rwo/class/astr511/lec11-f03.html) (<http://www.faculty.virginia.edu/rwo/class/astr511/lec11-f03.html>)

[LIGO](http://www.ligo.org/) (<http://www.ligo.org/>)

On-line Astronomy News

[Space.com](http://www.space.com) (<http://www.space.com>)

[NY Times Science](http://www.nytimes.com/pages/science/index.html) (<http://www.nytimes.com/pages/science/index.html>)

[BBC Science](http://news.bbc.co.uk/hi/english/sci/tech/default.htm) (<http://news.bbc.co.uk/hi/english/sci/tech/default.htm>)

[Sky and Telescope](http://www.skyandtelescope.com) (<http://www.skyandtelescope.com>)

[SpaceRef](http://www.spaceref.com) (<http://www.spaceref.com>)

Class attendance and participation will be important to how you do in the class. Since we will not use a book, it is important to come to class. The calendar for the course is given on canvas. I will try to stick the schedule as closely as possible. If any dates change, I will make

the changes in this file so refer to this webpage for updates.








YOU BELONG HERE: A climate conducive to learning and creating knowledge is the right of every person in our community. Bias, harassment, and discrimination of any sort have no place here. If you notice an incident that causes concern, please contact the Professor, TA, and the Campus Climate Response Team (<http://diversity.utexas.edu/crt> (<http://diversity.utexas.edu/crt>)).

STUDENTS WITH DISABILITIES: The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY. Also, please notify me of any modification/adaptation that you may require to accommodate a disability-related need. Specialized services are available on campus through Services for Students with Disabilities.

UNIVERSITY RULES: The University's deadlines and rules regarding dropping the course will be strictly enforced. I assume that you know the deadlines and the rules.





RELIGIOUS HOLIDAYS: By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Course Summary:

Date	Details	
Tue Jan 22, 2019	 Intro! (https://utexas.instructure.com/calendar?event_id=1380651&include_contexts=course_1239688)	12am
	 Text editor, python install (https://utexas.instructure.com/calendar?event_id=1380652&include_contexts=course_1239688)	12am
Thu Jan 24, 2019	 In-class 1 (https://utexas.instructure.com/courses/1239688/assignments/4607935)	due by 2pm
	 Homework 1 (https://utexas.instructure.com/courses/1239688/assignments/4607932)	due by 5pm
Tue Jan 29, 2019	 Choose article for presentation (https://utexas.instructure.com/calendar?event_id=1380661&include_contexts=course_1239688)	12am
	 Text editor, linux basics (https://utexas.instructure.com/calendar?event_id=1380658&include_contexts=course_1239688)	12am
Thu Jan 31, 2019	 In-class 2 (https://utexas.instructure.com/courses/1239688)	due by 11:59pm

Date	Details	
	/assignments/4607939)	
Tue Feb 5, 2019	 Python hands-on (https://utexas.instructure.com/calendar?event_id=1380662&include_contexts=course_1239688)	12am
Thu Feb 7, 2019	 HETDEX presentation (https://utexas.instructure.com/calendar?event_id=1380665&include_contexts=course_1239688)	12am
	 Homework 2 (https://utexas.instructure.com/courses/1239688/assignments/4607940)	due by 5pm
Tue Feb 12, 2019	 Project discussion and group selection (https://utexas.instructure.com/calendar?event_id=1380667&include_contexts=course_1239688)	12am
	 In-class 3 (https://utexas.instructure.com/courses/1239688/assignments/4607942)	due by 11:59pm
Thu Feb 14, 2019	 Projects selected (https://utexas.instructure.com/calendar?event_id=1380670&include_contexts=course_1239688)	12am
Tue Feb 19, 2019	 Data Analysis Basics (https://utexas.instructure.com/calendar?event_id=1380671&include_contexts=course_1239688)	12am
	 Homework 3 (https://utexas.instructure.com/courses/1239688/assignments/4607945)	due by 11:59pm
Thu Feb 21, 2019	 Project presentation (https://utexas.instructure.com/courses/1239688/assignments/4607948)	due by 11:59pm
Tue Feb 26, 2019	 CCD presentation (https://utexas.instructure.com/calendar?event_id=1380672&include_contexts=course_1239688)	12am
Thu Feb 28, 2019	 Statistics and Data Analysis (https://utexas.instructure.com/calendar?event_id=1380673&include_contexts=course_1239688)	12am
	 In-class 4 (https://utexas.instructure.com/courses/1239688/assignments/4607954)	due by 11:59pm
Tue Mar 5, 2019	 Project Presentation (https://utexas.instructure.com/calendar?event_id=1380678&include_contexts=course_1239688)	12am
Thu Mar 7, 2019	 Project Presentation (https://utexas.instructure.com/calendar?event_id=1380679&include_contexts=course_1239688)	12am
	 Homework 4 (https://utexas.instructure.com/courses/1239688/assignments/4608131)	due by 11:59pm

Date	Details	
Tue Mar 12, 2019	 Plotting practices and exercises (https://utexas.instructure.com/calendar?event_id=1380683&include_contexts=course_1239688)	12am
	 In-class 5 (https://utexas.instructure.com/courses/1239688/assignments/4608186)	due by 11:59pm
Thu Mar 14, 2019	 Databases: SDSS, GAIA, many others (https://utexas.instructure.com/calendar?event_id=1380684&include_contexts=course_1239688)	12am
Tue Mar 26, 2019	 Best practice for coding (https://utexas.instructure.com/calendar?event_id=1380686&include_contexts=course_1239688)	12am
Thu Mar 28, 2019	 Python experts (https://utexas.instructure.com/calendar?event_id=1380687&include_contexts=course_1239688)	12am
	 In-class 6 (https://utexas.instructure.com/courses/1239688/assignments/4608188)	due by 11:59pm
Tue Apr 2, 2019	 Homework 5 (https://utexas.instructure.com/courses/1239688/assignments/4608189)	due by 11:59pm
Thu Apr 4, 2019	 Statistics and Data Analysis (https://utexas.instructure.com/calendar?event_id=1380689&include_contexts=course_1239688)	12am
Tue Apr 9, 2019	 Short presentations with update on projects (https://utexas.instructure.com/calendar?event_id=1380680&include_contexts=course_1239688)	12am
Thu Apr 11, 2019	 Short presentations with update on projects (https://utexas.instructure.com/calendar?event_id=1380681&include_contexts=course_1239688)	12am
Tue Apr 16, 2019	 Engaging with research, job opportunities, cv's, etc (https://utexas.instructure.com/calendar?event_id=1380690&include_contexts=course_1239688)	12am
Thu Apr 18, 2019	 In-class 7 (https://utexas.instructure.com/courses/1239688/assignments/4608193)	due by 11:59pm
Tue Apr 23, 2019	 Project work (https://utexas.instructure.com/calendar?event_id=1380696&include_contexts=course_1239688)	12am
Thu Apr 25, 2019	 Project work (https://utexas.instructure.com/calendar?event_id=1380697&include_contexts=course_1239688)	12am

Date	Details	
Tue Apr 30, 2019	 Project work (https://utexas.instructure.com/calendar?event_id=1380698&include_contexts=course_1239688)	12am
Thu May 2, 2019	 Presentations (https://utexas.instructure.com/calendar?event_id=1380674&include_contexts=course_1239688)	12am
Tue May 7, 2019	 Presentations (https://utexas.instructure.com/calendar?event_id=1380675&include_contexts=course_1239688)	12am
Thu May 9, 2019	 Wrap up and plans for research (https://utexas.instructure.com/calendar?event_id=1380676&include_contexts=course_1239688)	12am

