

EPSS 9 (2015/6 Winter): Solar System and Planets

Tuesdays and Thursdays: 12:30pm - 13:45pm in Moore 100

Lecturer: David Jewitt jewitt@ucla.com, Geo 3713
Any section, any time

TAs:

- Erin Leonard erinleonard@ucla.edu, Geo 4681
Sections ABC, Office Hours M15:00-16:00, T11:00-12:00
- Liutauras Rusaitis rusaitis@g.ucla.edu, Schlichter 6844
Sections DMO, Office Hours T09:00-10:00, W09:00-10:00
- Steve Tomlinson stomlinson@ucla.edu, Schlichter 6844
Sections GHI Th 14:00-17:00, Office Hours: F 13:15-14:15
- Matt Walker mattw1027@ucla.edu, Geo 4680
Sections KLN, Office Hours M13:00-15:00
- Dave Milewski dgmilewski@epss.ucla.edu, Geo 3711
Sections EFJ, M13:00-14:00, W13:00-14:00

Discussion Locations: Geology 4691 and/or Geology 3820

Suggested Book: Universe: The Solar System (5th edition), Freedman et al.,
MacMillan Publishing Company
ISBN-10: 1319055230

****THIS VERSION: 2016 Jan 11****

Notes on the Class

The aim of the class is to be broad, informative and fun: you should end up being excited about the solar system and have a decent feeling for what we know, don't know and want to know about it. We will use numbers to describe things but will not rely much on mathematics because this is an introductory class and most of the people who take it do not have mathematical backgrounds.

We will cover the entire solar system in this class, from the rocky planets, to the gas and ice giants, the comets, the asteroids, the satellites and rings, the Centaurs, Kuiper belt objects and Oort cloud, and we will go beyond to consider the planetary systems of other stars and the likelihood and distribution of life.

Book

The Freedman book is there for background. You should read in parallel with the lectures (ideally before the relevant class) and you are encouraged to read ahead as much as you like (in your copious free time). The book was requisitioned and should be in the bookstore.

There are many other, similar introductory level books (Chaisson and McMillan Astronomy Today: The Solar System, Seeds et al.) and earlier editions of the same book. In my mind they're

all about the same in terms of the content. The Freedman book comes with the best online content and will probably be the most useful to many people in the class.

Interactions

You have several opportunities for interaction. First, please ask me questions in the lectures. This is the main way I can tell whether or not I am hitting the right notes: I need your feedback and right there in the lecture is the best place and time to start. Second, there are “labs” (UCLA-speak for “discussion/interaction sessions”) run by the TAs in which you are specifically encouraged to ask lots of questions and interact with them. Third, my office is Geology 3713 and you are welcome to see me at any time to discuss the subjects of this class (send me email if you want to be sure that I’m there, or take your chances and stop-by). Email is another good way to interact with me: phone is not a good way (I rarely answer the phone).

Grades

The various graded aspects of the class are not there to trip you up. They are there to focus your attention on the key points of the class. The final grades will be weighted between homeworks, in-class exams, discussion section activities and the final exam as

Homework	10% (Moon exercise)
Discussion Section Activity	30% (best 7 of ~9)
In-class exams (2)	20% (multiple choice)
Final exam	40% (multiple choice)**

The answer to the inevitable question “do you grade on a curve?” is “I think so”. You can assume that if you make a reasonable effort you will get a reasonable response in terms of the grades, and you will know from the homework and exams how you are doing as the class progresses, so there should be no surprises. We’ll have some extra-credit exercises as well. If you want to get an "A" you can, by working at it.

** I will provide a list of final exam questions (perhaps 50 - 75 in number) roughly a week before the final exam (scheduled for Tuesday March 15th, 11:30-14:30). At least half the questions on the final exam will be from this list.

Practical Details

PDFs of the lectures will be posted on-line but, since PDFs cannot show movies or animations and have no sound, these may not be an effective substitute for attending the class.

Where practical, I will also post .mov (e.g. iPod) versions of the lecture slides and movies, to supplement the PDFs. It's by far the best thing to attend the lectures, though, and use the on-line material and the book as back-up, if needed.

There are no make-up exams and late homeworks will not be graded because these things place a disproportionate burden on the TAs given the huge size of the class. No electronic devices may be used during the exams.

Policy on Cheating

Experience shows that some people cheat. There are many reasons not to do this (e.g. you don't learn anything by cheating, it is dishonest, you lose your integrity, you lose the respect of all the people who find out you cheat, and the university will respond aggressively when you are found out).

I don't want to be a policeman for cheaters, so I have a simple policy on cheating. I will collate any evidence for cheating (usually this comes from the TAs but I have also noticed cases) and send it directly to the Dean of Students. The DoS will assess the evidence and issue "sanctions", as they call them. Once the DoS is involved, the whole matter is out of my hands and those of the TAs, so there's no point in discussing it with us. Best thing is to not cheat.

Date	N	Subject	Notes	Week
JANUARY				
Tu Jan 05	1	Introduction & Solar System Tour		1
Th Jan 07	2	Units, Universal Context, Star Formation		
Tu Jan 12	3	Physical concepts/Protoplanetary Disk		2
Th Jan 14	4	Sun as a Star		
Tu Jan 19	5	Sun		3
Th Jan 21	6	Asteroids		
Tu Jan 26	7	Meteorites		4
Th Jan 28	8	Comets		
FEBRUARY				
Tu Feb 02	9	In-Class Exam 1		5
Th Feb 04	10	Impacts & Threats		
Tu Feb 09	11	Interiors, Plate Tectonics, Surfaces		6
Th Feb 11	12	Surfaces and Atmospheres I		
Tu Feb 16	13	Atmospheres II		7
Th Feb 18	14	Giant Planets		
Tu Feb 23	15	In-class Exam 2		8
Th Feb 25	16	Icy Satellites, Simple Life		

Date	N	Subject	Notes	Week
MARCH				
Tu Mar 01	17	Exoplanets		9
Th Mar 03	18	Advanced Life, Panspermia		
Tu Mar 08	19	TBA	Keck	10
Th Mar 10	20	Summary of the Class		
Tu Mar 15		Final Exam, 11:30 - 14:30		

The above syllabus is an outline. It will definitely change as we go along and I will post updates to the class web site accordingly.