

2015

# Astronomy 101-002 The Solar System Fall 2015

David Leake

*Parkland College*, [dleake@parkland.edu](mailto:dleake@parkland.edu)

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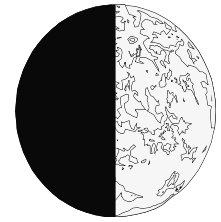
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# ASTRONOMY 101-002

“The Solar System”

Fall, 2015



**Instructor:** Dave Leake, planetarium director

**Office:** Planetarium, 351-2567

**Student Hours:** M 9am or MW 1pm, or appt, M159

**Phonemail:** 373-3781 ext. 2567

**Email:** [dleake@parkland.edu](mailto:dleake@parkland.edu)

**Class web pages:** <http://natsci.parkland.edu/ast/101> & [cobra.parkland.edu](http://cobra.parkland.edu) (our specific class)

**Text:** “Discovering the Essential Universe” by Neil Comins, 6<sup>th</sup> edition

The text is available for purchase *or* rental in the Parkland Bookstore. An e-book is available for a 180-day rental at the bookstore, too.

**Grading:**

Pre/Post course assessments:	20 pts
12 x 25 point quizzes:	300 pts.
Final exam:	120 pts.
13 of 14 laboratory exercises:	260 pts.
Telescope Observing:	100 pts.
Participation:	80 pts.
2 Sky Drills (5-pts each):	10 pts.
1 Sky Quiz	40 pts.
Semester Project:	<u>70 pts.</u>

1000 pts. Total

90% - 100%:	A
80% - 89%:	B
70% - 79%:	C
60% - 69%:	D
< 60%:	Oops!

## PRE/POST COURSE ASSESSMENT:

- During the first week of class, you will complete a 30 question, multiple-choice quiz on Cobra. It will not be graded but you'll get 10 points just for completing the quiz. Please do the best you can! We'll repeat the exercise at the end of the semester.

## QUIZZES:

- There will be a timed 25-point quiz (~10-12 questions) each week that you'll take on Cobra (online). Questions will cover class material & text and will not be cumulative. There will also be extra credit points on each quiz that you get to keep. Quizzes will be available Thursday morning to Friday night and you'll get *one* attempt. Once you open the quiz, you need to complete it – you won't be able to open it later. No make-ups will be given. Quiz hints will be given on Wednesdays.
- During final exam time, there will be a 120-point in-class, closed book quiz covering the last half of the semester & major ideas of the class.

## LABS: USUALLY TUESDAYS IN L146:

- See the "[Lab Procedures](#)" web page for more information. You *must* have 60% of the lab points to pass the class! *No exceptions!* Lab activities are found in a packet that you purchase from the Parkland bookstore. *It is your responsibility to bring the lab for the week to class and complete any pre-lab assignment. This will be checked!*
- Lab activities can't be made up except in certain circumstances. We'll drop your lowest lab grade. Late labs will be accepted until they are handed back to you with a one point per day penalty. For some labs, you'll be able to submit to an online dropbox in Cobra.
- During the first week of lab, you'll be asked to complete a [tutorial](#) on a *Stellarium* software package we'll be using in several labs. Though not required, you are encouraged to download it to your own computer at [stellarium.org](http://stellarium.org). This is a free download. Stellarium is also loaded in M108, CAS, and the Parkland Library.

### **SKY DRILLS & SKY QUIZ:**

- You will be quizzed on constellations, asterisms, and other sky objects in the planetarium. A list of the objects you will need to know will appear on our Cobra site.
- Two drill sessions will be given during class to prepare you for the Sky Quiz. Attendance at each drill is worth 5 points. The drills will be Nov 4 and 11. Quiz is Nov 18.

### **OBSERVATION:**

- You will be required to attend an evening observing session with telescopes during the semester. Dates & times will be announced in class and [on the web site](#). Dates will depend on the Moon phase since we'll try to see the Moon in addition other sky objects.
- Telescope observing takes place at a site away from Parkland College to avoid light pollution. You will be required to sign-up online for sessions in advance. We will meet at Parkland before carpooling out to the site. A 1.5 page report must be turned in *within one week* of the session, containing a description of the observing conditions, instruments used, a description of what you saw, and your impressions. You will receive 75 points for attending the session, but you must turn in a report as proof of your attendance (25 pts). There will be no "I" grades for missed observing sessions.
- All observing sessions are "weather permitting". If you provide contact info when you sign you can be texted if the weather is iffy.

### **PLANETARIUM:**

- We'll meet for several sessions at the Staerkel Planetarium. The days will be announced in class. On these days, you should go straight to the planetarium and not go to the classroom. No food, drink, smoking, *cell phones*, or those stupid shoes with the red flashing lights on them are allowed in the dome. Be sure to sign the attendance sheet there.

### **LUNAR OBSERVING SEMESTER PROJECT:**

- A research project involving observing the Moon on your own will be completed during the semester. The project is worth a total of 70 points, but done in parts. Details of the project will be posted on the [class web page](#) and announced later in class.
- Materials appear in the lab packet including the observation sheet. We'll start week #3.

### **PARTICIPATION:**

- The powerpoints (which will be posted on Cobra) will contain some assessment questions and you'll get points for participating using your clicker! You'll need to purchase a clicker, use the phone app or forfeit these points. Clicker questions could end up on quizzes, too! Let's face it, I'm lazy.
- We'll also do several in-class group activities throughout the semester where you'll get participation points. *But you do have to participate!*

### **EXTRA CREDIT:**

- There will be a handout posted in Cobra on things you can do for extra credit. Missed quiz points may be made up this way up to a 70-point limit. Ask Dave to tell you about the "World of Science" talks. Completing all 14 of the labs is worth 10 extra credit points.
- Extra credit can be submitted at any time during the semester but won't be accepted after 5pm on the last day of class.

## TENTATIVE FALL SYLLABUS AND LAB LIST

<u>Week of</u>	<u>Readings/Topics</u>	<u>Lab assignment</u>
Aug 24	1.1-1.6, 1.14; distances, the sky, motions	Lab Intro; Stellarium tutorial*
Aug 31	1.7-1.9; Seasons, calendars	Scientific Method*
Sep 7	1.10-1.13; Moon phases & eclipses	Seasons
Sep 14	2.2-2.5; Copernicus & Kepler's laws	Lunar Phases & Eclipses
Sep 21	2.6-2.8; Galileo & Newton's Laws <i>Start Moon observing on your own!</i>	Retrograde Motion*
Sep 27	3.5-3.10; Telescopes	Telescopes
Oct 5	3.1-3.4, 3.11, 3.14-3.18; Light & Spectra	Light & Spectra
Oct 12	4.8-4.9, 6.1; Solar System overview	"Hunt for Alien Worlds"
Oct 19	4.1-4.7, 5.1-5.10; Planet formation, exoplanets	"Meteors: Fire in the Sky"
Oct 26	6.2-6.10; Earth & Moon	<i>Lunar Project analysis*</i>
Nov 2	6.11-6.25; The Inner Planets	"Magnetic Storm"
Nov 9	7.1-7.13; Jupiter & Saturn	"Future Tourist Traps"
Nov 16	7.14-7.17; Uranus & Neptune	"Finding Life Beyond Earth"
Nov 23	8.1-8.13; Dwarf planets, asteroids, comets <i>Final Moon project report due Mon.</i>	Kuiper Belt Discovery
Nov 30	9.1-9.6; The Sun	Solar Observing
Dec 7	Review	TBA

Labs with a "\*" will use tablet computers – bring your own laptop if you own one. The last day of class is **December 11**. All work must be in by 3pm on that day to be counted. *No exceptions!* The final 120-point quiz will be given in room L146, 11-1pm Dec. 16. The last day you can drop is Dec. 4. It is your responsibility to withdraw yourself from the class if you feel the need to do so. Please check out the withdrawal procedures in the Parkland catalog. ***Class attendance is imperative!!***

If you believe you have a disability for which you may need an academic accommodation (e.g. an alternate testing environment, use of assistive technology or other classroom assistance), please contact Cathy Robinson, Room U260, 217-353-2338, or email [crobinson@parkland.edu](mailto:crobinson@parkland.edu).

A full syllabus appears on the class's Cobra site (linked from my.parkland.edu)