



## **ASTR 1303 01W – Stars and The Universe Online COURSE SYLLABUS: Fall 2024**

### **INSTRUCTOR INFORMATION**

Instructor:

Office Location: **Jeff Wilson, Adjunct Faculty**

Office Hours: **None – Off-campus**

Office Phone: **None**

Office Fax: **None**

University Email Address: [jeffrey.wilson@tamuc.edu](mailto:jeffrey.wilson@tamuc.edu)

**(Please include “ASTR Online” in the subject line)**

Preferred Form of Communication: **Email**

Communication Response Time: **Please allow 24-hours for response time, 48-hours on weekends/holidays. In most cases, I should be able to get back with you within the hour.**

Virtual Office Hours:

Join Zoom Meeting

<https://tamuc.zoom.us/j/97232018135>

Meeting ID: 972 3201 8135

### **SUMMARY OF IMPORTANT INFO**

- 1) Links to all youtube information are available in myLeo (aka D2L Brightspace).
- 2) If the information in the videos differ from the syllabus, the syllabus overrides the video information.
- 3) The required textbook is 21<sup>st</sup> Century Astronomy – 7<sup>th</sup> edition with Smartwork. See below for details.
- 4) Any work turned in via email that has multiple pages must be as a single attachment.

**Important disclaimer:** This course reuses department-created videos and content. Many dates are repeated in multiple locations and it's difficult to catch them all. If

*The syllabus/schedule are subject to change.*

you come across anything that is confusing, unclear, or inconsistent please notify me immediately by email so I can either fix it or notify the class of the issue. **Speak up!** Any date discrepancies are superseded by dates in the syllabus.

## COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

### Textbook

- 21st Century Astronomy by Kay, Palin & Blumenthal, 7th Edition, + Smartwork5 access. Publisher: WW Norton



Required

### **21ST CENTURY ASTRONOMY (LL)- W/ACCESS**

**Author:** PALEN

**Edition:** 7TH 22

**Published Date:** 2022

**ISBN:** 9780393877038

**Publisher:** NORTON

### Other Requirements

- A computer (PC or Mac) on which you can access the internet and install software
- Access to a scanner or other means of turning in some written work and sketches.
- Scientific Calculator

### **How to Save Money**

The TAMUC Bookstore is selling new editions of the book in hardcover, a cheaper version in looseleaf, or the digital version. Used or rental versions of the book are available from the bookstore or elsewhere on the web.

**IMPORTANT:** Used books and rentals often do not come with access to SmartWork, while new versions come with complimentary access. You can purchase SmartWork access from <https://digital.wwnorton.com/astro7>.

Choose your textbook option carefully: The total cost of book + SmartWork may be cheaper if you get a new textbook. Buying a used textbook will require the SmartWork be purchased separately, so the combined cost may be more. If you use an older version of the text, it will be your responsibility to reconcile chapter, section, and/or page number differences from

*The syllabus/schedule are subject to change.*

what I post in assignments or schedules. Also, you must ensure that any SmartWork access is for the latest version.

You may also purchase the full version of the textbook, covering material for both the Solar System (ASTR-1304) and Stars and the Universe (ASTR-1303). Additions also exist with material limited to the individual course. You may purchase either the full text or the text specific to your course.

### **SmartWork Access Information**

Homework and Reading Quizzes must be completed using SmartWork. You are required to purchase a subscription to this site; a registration code for a 365-day subscription comes included with any new textbook available through the bookstore, or it can be purchased separately. **The registration code is provided either with your text or from the publisher. It is unique to you, not the course. I cannot provide the registration code for you.**

**Note:** Homework links will be provided for you on our D2L Brightspace/myLeo page. If you use the links provided in myLeo, the key and course are set up for you. If you access Smartwork directly through the publisher website, you will need the code, but this is ***not recommended*** and will result in lengthy delays in getting your grades updated in myLeo. SmartWork has support available at: <https://digital.wwnorton.com/astro7>.

The following videos will help you get set up properly for SmartWork. Please watch them.

[https://www.youtube.com/watch?v=k7\\_s2nsMBqM](https://www.youtube.com/watch?v=k7_s2nsMBqM)

<https://www.wwnorton.com/tech-support>

## **Course Description**

Astronomy is an ancient science with records dating back to the dawn of civilization. Despite this long history, it remains an exciting and vibrant area of ongoing study. In the coming years, astronomers may discover Earth-sized planets around other stars, see the first stars emerging from the cosmic dawn, and explore new physics in realms and laboratories that Earth-bound scientists can only dream of.

In this course, we will focus on studying stars and galaxies, as well as the natural laws and tools that astronomers use to study these distant objects. We'll begin by studying gravity, light, and telescopes. We'll then study the Sun as an example star and use it as a stepping stone to reach ever further into the Universe. Along the way we'll discover new worlds around other stars, peer into the hearts of black holes, witness collisions of galaxies, and piece together vital clues pointing to the origins of the Universe.

One big topic we will not cover is our own Solar System. If you want to know details about

*The syllabus/schedule are subject to change.*

the eight planets, their moons, asteroids, meteors, and comets, you'll need to take ASTR 1304.

**Student Learning Outcomes** (Should be measurable; observable; use action verbs)

1. You will be able to explain the characteristics of stars and their life cycles.
2. You will be able to identify the classes of galaxies and their basic properties.
3. You will be able to state evidence supporting astronomers' explanations of the origin and fate of the Universe.
4. You will be able to evaluate statements about astronomy using the scientific method.

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

None, though you should be comfortable with basic algebra.

### **Instructional Methods**

### **Course pace**

While I realize that some online students prefer to complete a course as fast as possible and others like to wait several weeks and then do as much work as possible, these methods won't work with this course. Student interaction is a crucial part of learning, and we can't interact if no two students are on the same part of the course.

The course is broken up into 12 units. *The onus is on you to keep up with deadlines through myLeo/D2L*. MyLeo/D2L has a Course Calendar tool to help you keep track of what you have and have not completed. If you go to the Course Home page and click on "Communication Tools -> Calendar" at the bottom you can access this tool.

### **How This Course Is Organized**

This course will be organized by units. Most units will last just one week, but some units will cover multiple weeks. Some units cover one chapter in the text, some cover multiple chapters. You should check the course page often to see what activities and assignments are due during the week.

### **What Should You Do First?**

After reading this syllabus, you should proceed to the course page on D2L (myLeo), watch the introductory video on the course homepage, and then proceed to Unit 1: Introductions. Complete the activities and assignments listed under Unit 1. Due dates are specified on D2L.

### **How Should You Proceed For Each Unit?**

*The syllabus/schedule are subject to change.*

1. All activities and assignments for a unit will be listed on the unit's main page on D2L. The unit home pages are found in the left navigation bar of D2L. I will send a weekly reminder a few days before the due date of each unit. **Disclaimer: You are responsible to know due dates. If I am unable to send a reminder, it is not an excuse to miss assignment due dates.**
2. You should complete any reading assignments and reading quizzes first (note the reading quizzes are not for grades).
3. After completing reading quizzes, you may listen to any online minilectures listed within the unit and complete the associated response questions.
4. Complete any other listed activities and assignments given in the weekly unit.
5. If there is a homework activity under the unit, be sure to complete it by the deadline.
6. Even after completing the unit, you may want to check for any new content (such as new minilectures or external links) that I may post in order to clear up any confusing topics.

## Participation

Because this course is an online course, participation options are limited. However, if the need arises, we may use threaded discussions or live meetings on D2L Brightspace. These will not be required but may help you to ask questions in an interactive manner. If email threads get too long, I may elect to move discussions to this forum.

## SmartWork: Reading Quizzes and Homework

SmartWork is an online astronomy homework and tutoring tool. Its advantages are that SmartWork will give you instant feedback on whether you got a question right or wrong and provide you with hints and tools to better learn the material.

I suggest the following strategy for learning the information: Skim the chapter in the text, looking at pictures, unit titles, and word definitions. At the end of the chapter is a brief chapter summary you should also read over. On occasion, I may post minilectures, that cover content not covered well in the textbook. Finally, re-read the chapter, in more depth this time.

Homework assignments will be assigned for each unit. These are intended to be the "capstone" of the unit; i.e. they should usually be the last thing you do in a unit. If you do the homework and find you still don't understand something, you definitely want to ask me about that topic in office hours or by email.

## Turning in Work

If you have a need to turn in any work to me, **it must be in a single file**. You have many options at your disposal to do this. You can copy all pages into a single doc or pdf file. You can take photos and add to doc or pdf files. You can also use the tool CamScanner, a free tool to help convert digital copies. Do whatever works best for you, but make sure I only get a single file per assignment. Note that if multiple assignments are due, you can turn in 1 file per exercise.

*The syllabus/schedule are subject to change.*

Also, note that there are relatively few assignments. Getting a “0” on any assignment will have a dramatic impact on your grade!

## SmartWork Grading Policy

The grading policy for each SmartWork assignment are shown in each assignment. Late homeworks are penalized 10% per day. After 7 days, you will earn 0 points. The final assignment, however, must be turned in by the due date. No late work will be accepted since it is end of semester.

The following are considered cheating and will not be tolerated: Directly copying text from a website or other printed source, obtaining copies of solutions to homework questions (whether from past students or other sources), directly copying another student’s work, etc. See the section on “Academic Integrity” below for full details.

### Late Work

Late SmartWork assignments are penalized 1 pts for each day late (including weekends); after 7 days assignments will receive a zero. Late exams are also subject to a 10 pts per day penalty and will receive a zero after 1 week from the due date unless approved beforehand.

## Mini-Lectures and Quiz Questions

Within each unit, I will upload mini-lectures that you will be able to view. These videos are approximately 15 minutes each and will focus on one or two important points each.

Each video will be paired with a minilecture quiz activity on D2L. The responses contain a few thought questions that allow you to check your learning to see if you understood the material and thought processes covered in the mini-lecture. These are an opportunity for you to begin to think about and work with the concepts before they show up on homework or exams without the pressure of getting a right or wrong answer. Some questions will be easy, some hard, and some will require you to put together more than one concept in order to figure out an answer.

The minilecture quizzes are **not part of your course grade** but allow you to check your learning in a no-pressure environment. Correct answers and brief explanations for the answers should be visible after you complete the response questions.

There will be material covered in the reading that I will not cover in mini-lectures but yet will expect you to know. If a topic is not covered in a minilecture but appears on a reading quiz and/or homework, it may well appear again.

*The syllabus/schedule are subject to change.*

## Exams:

Three online exams will be given during the semester through D2L Brightspace: the first after Unit 5, the second after Unit 9, and the third at the end of the term. For the exams you may use whatever materials you like (text, homework solutions, internet searches, etc). However, the exams are *timed* and may only be taken once, so you will want to study the material well before taking the exam. The exams are not officially cumulative, but astronomy is a very intertwined science and topics covered on exam one will be required knowledge to answer questions on exam three.

## Examination Policy

- For the online exams, you may use whatever static materials you like, including your text, homework solutions, internet searches (as long as you do not cut-and-paste), etc. But see the next point...
- You must work on the exam alone – you may not discuss the exam with other students prior to the due date, you may not use any sort of communication like email, Skype, texting, ChaCha, talking, writing, semaphore, etc., etc., etc. to communicate with any other human during or after the exam.
- The exams are *timed* and *may only be taken once*, so you will want to study the material well before taking the exam.
- **The exam duration is specified in the myLeo (D2L) for the course. You must complete the exam during this time period. If you cannot take the exam during the scheduled time, you must get prior approval. If you do not, a late penalty of 10 pts per day will be assessed. No makeup exams will be allowed after 1 week from the closing date.**

## Labs:

Astronomy labs are a separate class (Astr 1103); you do not need to be enrolled in a laboratory section to earn credit in this course. You should speak with your academic advisor to determine if signing up for a lab section is right for your degree plan. You can take the lab courses in future semesters; they do not need to be taken concurrently. At present, we do not offer online labs for astronomy.

## Extra Credit: Observatory Visit, Science Museum Visit, or a Planetarium Show

If you live close to Commerce, you will have the opportunity for an optional visit to the Commerce Observatory (about 5 miles south of Commerce). If you attend, simply write up what you learned/observed and have the leader sign and date your paper to prove you attended.

You can also earn extra credit by attending a planetarium show. The A&M-Commerce Planetarium also exhibits several different shows. Go to

*The syllabus/schedule are subject to change.*

<http://www.tamuc.edu/planetarium/> for a current listing of show dates, times, and cost. If you attend a show, tell the staff that you are a member of this class. They will make a note that you attended. Then email me two paragraphs: one summarizing the show, and a second telling me something specific about the show that you found interesting and why. If and only if you complete both of these steps, you will get extra credit.

If you are not near Commerce or cannot make it to these opportunities, you can visit a science-themed museum and send me a copy of your ticket stub and a short paragraph describing an interesting exhibit you saw at the museum.

Additionally, there is a list of extra credit viewing/experiment exercises listed in a document called 'Observing-Experiment Projects.doc' stored in the Doc Sharing folder on D2L Brightspace. Many will require at least minimal observations so you will need clear skies. Don't wait until the last days and expect clear skies – start early!

Each activity will be worth a minimum of 1 point up to a maximum of 5 points. The value you receive will depend upon the value of your writeup. If you do not do at least the expected effort (as specified in the instructions), you will receive a "0" as no fractional credit will be given. If you go above and beyond the expectations, you can receive more than 1 point. Be sure you ask me if you have any questions about the amount of credit for each specific activity as some are more challenging than others.

***Extra Credit Terms, Conditions, and Caveats:***

You may only earn extra credit once per category, though you are welcome to attend as many of the observatory and planetarium events as you like. In other words, you can only get credit for one planetarium show and one observatory visit, unless prior approval is given. All extra credit work must be turned in on or before the last day of class. Family of any age is welcome to the planetarium shows; be sure to check on the age-appropriateness of shows (all are fine for all audiences, but some are aimed at children and some at adults). You will receive 1 point of credit added to your final grade for each extra credit attempt (up to a maximum of 5 pts). Observing exercises may be worth more than 1 point depending on which one you attempt (ask beforehand if you want to know the weight for an exercise).

## **Student Responsibilities or Tips for Success in the Course**

This course is a web-based course. There will be no official class meeting times as everything will be done through D2L. It is also not self-paced. There are specific due dates for assignments and exams. Additionally, it is driven more by textbook reading and watching short video lectures. This course will require just as much work as a face-to-face course.

*The syllabus/schedule are subject to change.*



The successful student will keep up with the schedule communicated in D2L and will turn in work in by the posted schedules.

If you are uncertain as to whether this format is for you, you are always welcome to switch sections to join our brick-and-mortar version of Astr 1303 (see the Schedule of Classes for meeting times and course numbers).

## GRADING

Grading will be done on an absolute scale with no competition. If you all earn an A, you all get an A. I may “curve” grades for specific assignments and/or final course grades at my discretion, but your percentage earned will never go down if I apply such a curve. Your current grades will be available through the gradebook on D2L Brightspace. Note that the gradebook on SmartWork is *not* official.

*I will entertain other ideas for extra credit, but I reserve the right to limit you to the extra credit described on the previous page.*

Grading is weighted by assignment using the following weights:

Assignment Type	Weighting
Homework Assignments	25%
Exam 1	25%
Exam 2	25%
Exam 3	25%

The grading scale is:

90% to 100%	A
80% to 89.9%	B
70% to 79.9%	C
60% to 69.9%	D
Below 60%	F

## TECHNOLOGY REQUIREMENTS

### LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

*The syllabus/schedule are subject to change.*

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

Zoom Video Conferencing Tool

[https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom\\_Account.aspx?source=universalmenu](https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu)

## ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

## COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

## Interaction with Instructor Statement

**Email:** I can be reached by email at [jeffrey.wilson@tamuc.edu](mailto:jeffrey.wilson@tamuc.edu). It may take me up to 24 hours to send you a response (48 hours on the weekend or holidays), but most often I will get back with you within the hour. If you don't hear back from me in 24 hours,

*The syllabus/schedule are subject to change.*

please send another email. I assume you check your campus email daily, so if I send out a class email, I'll assume you read it.

**Office Hours:** Office hours are virtual and are scheduled through D2L Zoom to be Wed 8:30pm-9:30pm. If you cannot make that time, I can be available upon request. Office hours are times that I set aside when I promise to be available so that you can contact me with any questions about the course real time. During office hours, you can ask questions about the course material, ask about homework, see your current grade, or ask other questions about the class or astronomy in general.

Office hours work best if you have your textbooks, class notes, and homework sets with you.

Please note that if no one shows up during the first 30 minutes of the scheduled time, I will likely close the session. Meaningful discussions cannot be completed in the last 5 minutes of the scheduled time. I will stay the entire session to cover questions in progress, but will not start lengthy discussion at the end of the time. If you must show up late, please let me know in advance. I do have a hard stop at the end of the time for other office hours.

If you want to talk but cannot come during office hours, please contact me by email in order to set up an individual appointment. By setting an appointment, you both guarantee that I will be online and that I will have plenty of time to talk with you.

**Social Media:** Please don't try to friend me on Facebook or other social networking sites while taking this class. I prefer not to spam you with cat videos, and you won't have to worry about me trolling you.

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures/Policies**

#### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

*The syllabus/schedule are subject to change.*

## **University Specific Procedures**

### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook

[http://www.tamuc.edu/student\\_guidebook/Student\\_Guidebook.pdf](http://www.tamuc.edu/student_guidebook/Student_Guidebook.pdf)

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

### **TAMUC Attendance**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedures 13.99.99.R0.01](#)

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

### **Academic Integrity**

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

[Graduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

### **Students with Disabilities-- ADA Statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a

*The syllabus/schedule are subject to change.*

learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

### **Office of Student Disability Resources and Services**

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Student Disability Services](#)

<https://www.tamuc.edu/student-disability-services/>

### **Nondiscrimination Notice**

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

### **Campus Concealed Carry Statement**

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

### **A&M-Commerce Supports Students' Mental Health**

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to

*The syllabus/schedule are subject to change.*

community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit [www.tamuc.edu/counsel](http://www.tamuc.edu/counsel)

### **AI use policy [Draft 2, May 25, 2023]**

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

### **COURSE OUTLINE / CALENDAR**

The course will cover many of the topics outlined below. The dates will be posted in the online classroom and are subject to change, so pay attention to announcements on D2L Brightspace for final due dates.

#### **1<sup>st</sup> Block: Tools of the Astronomer**

- Unit 1: Introductions (8/26 - 9/1); *due date on 9/8*
- Unit 2: The Scientific Method & Astronomy (9/2 - 9/8)
- Unit 3: Radiation (9/9 - 9/15)
- Unit 4: Spectroscopy (9/16 - 9/22)
- Unit 5: Telescopes (9/23 - 9/29)
- **Exam 1: 9/30 - 10/1**

#### **2<sup>nd</sup> Block: Stars**

- Unit 6: The Sun (9/30 - 10/6)

*The syllabus/schedule are subject to change.*

- Unit 7: Properties of Stars (10/7 – 10/16)
- Unit 8: Stellar Evolution (10/17 – 10/27)
- Unit 9: Star Death (10/28 – 11/3)
- **Exam 2: 11/4 - 11/5**

**3<sup>rd</sup> Block: Galaxies and the Universe**

- Unit 10: The Milky Way and its Neighbors (11/4 - 11/10)
- Unit 11: Cosmology (11/11 - 11/19)
- Unit 12: The Big Bang (11/20 - 12/4)
- **Exam 3: 12/4-12/5**

***All extra credit must be completed the Friday (12/5) of Exam 3 week.***