

Midterm Topics (next Monday, Sept. 14)

1. Scientific units, notations
2. Exponents, trigonometry
3. Length scales in the universe, astronomy units
4. Eratosthenes: radius of the Earth
5. Retrograde motion of the planets, epicycles
6. Earth's axis tilt, seasons, precession
7. Important stars and constellations
8. Kepler's Laws
9. Galileo's & Newton's contributions
10. Newton's laws
11. Conservation laws: Energy, momentum, angular momentum
12. Kinetic & Potential Energy

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 11. Conservation laws: Energy, momentum, angular momentum
 12. Kinetic & Potential Energy
 13. Gravity
 14. Circular Motion
 15. Escape velocity
 16. Tides
 17. Electromagnetic waves
 18. Electromagnetic spectrum
 19. Blackbody radiation
 20. Photons
 21. Electronic structure of atoms
 22. Spectroscopy
 23. Doppler effect
 24. Nuclear particles
 25. P-P chain solar fusion
- [Not today's topics]

Midterm Format

- 4 questions (or if two are really easy then 5 questions)
- Mix of quantitative and qualitative questions
- Time: 9 am – 9:50 am
- I will send you the PDF with the midterm questions at 9 am (via Blackboard and e-mail).
- You must upload your answers in PDF to Gradescope (same as homework).
- Submission window closes at 10 am.
- Answer each question on a separate piece of paper(s) – same as homework. You do not need to print out the test.
- Write legibly. Points will be taken off for messy and unreadable test answers.
- Take a picture of each answer for submission to Gradescope (same as homework).

Midterm Rules

- Closed book test.
- No internet searches ... No internet usage.
- No phones, except for taking photos of your test (after 9:50 am)
- No use of course website, Blackboard course notes, or OpenStax Astronomy book.
- Calculator recommended (with trig functions).
- **Proctoring:** The midterm will be taken during a Zoom session. You must have your **webcamera ON** so that I can see you, i.e. you should not be working at your computer, but instead working with pen and paper on your test. Please remove any digital backgrounds on Zoom.
- Install **Honorlock** add-in to your browser (Chrome is required).