

Lecture 30

## Final review

### Grade finalization

- Last day to turn in requests for grade review - TODAY
  - Homeworks 1-5
  - PRS clicker scores
  - Midterm #1
- Except HW 6 & 7 – June 15
  - HW 6 & 7 scores posted next Wednesday
- Everything reviewed to date posted this morning
- Final grades posted - June 20

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### Homework

- Due at the end of class today.
- Grade adjustment on Homework #5

### Online feedback

- Please go to this website and fill out the evaluation form  
<https://www.sio.ucsd.edu/secure/gradeval/>

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### Final logistics

- Bring a #2 pencil.
- Scantrons will be provided.
- Cheat sheet – 1 page, 1 side, handwritten, drawings ok this time, but also handcrafted. Turn in with final. Must meet specs or final to be assigned any points.
- Photo ID required to turn in the exam.
- No cell phones, mp3 players, or other computing and/or communication devices allowed during the exam – Any exceptions will result in no points given for the exam.
- 150 questions.

Exam next Friday – 3-6 PM.  
Office hours and problem sessions open next week.

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**Resources to study**

1. Your in-class lecture notes
2. Content in assigned reading
3. Topics and activities covered in homework

\* These are *complementary* materials. One resource enhances the other, but does not necessarily duplicate it.

\* Focus study on - synthesis of concepts

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**The large themes – same as before**

- How the solar system formed
  - Timeline
  - Condensation, accretion
  - Place of the solar system in the universe
- Order in the solar system
  - People looking for it
  - Seeing the pattern
  - Defining it quantitatively, if empirically
  - Explaining why quantitatively
  - Predictability
  - Exceptions to predictability - catastrophe

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**Understanding systems**

- Significant aspects of the solar system
- Development of our understanding – the idea, testing and observation, new knowledge
- How scientists have communicated knowledge over time
- An abundance of circumstantial evidence vs. seeing things firsthand
- Best knowledge at the time, vs. bad info
- The basis of action

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- Technology

The light telescope

New vistas made possible by instruments that allow views of the expanded electromagnetic spectrum

Aeronautics, rockets, and Newtonian physics

Satellites, remote vehicles and space travel

Communication and visualization technologies at the speed of light

Measurement technologies

Life support

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- What do we know about the planets and other objects in the solar system?

Comparison of key planetary parameters

Key planetary parameters

Geometry, size, surface conditions, internal layering and composition, magnetic field, atmospheric composition, temperature, etc.

Planetary history

How we infer or know these things

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- The possibility of life on other worlds

The bias of what we know of life on Earth – the only clue we have

The importance of water

Planetary ecology – the interaction between living things and their environment

Life alters the environment as much as life is affected by the environment

DNA

Archaea

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- Our future in space

- Hazards from outer space

- Our hazards to things in space

- The reasons why we go to space

- Costs of going to space

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