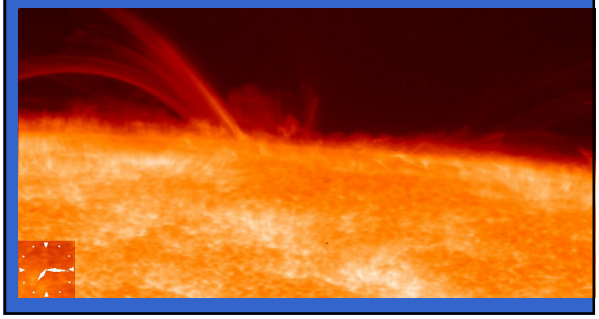
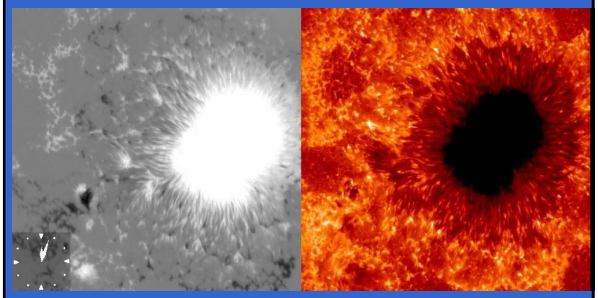
December 5, 2006

Agenda

- Announce:
  - Observations 6:15pm
- Solar Movies
- Katherine's Report on "Rare Earth"
- Ryan's Report
- Review
- Heather & Co





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- Chemical energy–a kind of burning
- Gravitational energy. It is converting its strong gravity into heat
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- High density
- Uranium present
- All of the above
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- The two protons have + charges and repel. Only at high speed can they collide close enough for nuclear forces to bind them
- High temperature and speeds involve relativity, and this is a relativistic reaction
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- 1,2, and 3

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Ch. 7—Our Solar System

- A few key/defining characteristics of each component of system (sun,planets,asteroids,comets)
- Sun—what's it made of? How big is it?
- Which planet is most metallic? Hottest? Biggest?
- Where are the asteroids? Comets?

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Ch.8—Formation of the Solar System

- 4 properties to be explained
- Evidence for nebula theory?
  - Stars forming in other gas clouds
  - Computer models
  - Prevalence of disks—disks around other stars
- Evidence against?
- Understanding of:
  - Origin of two types of planets—frost line
  - Heat up, spin up, clear out of disk
  - Explanations of exceptions
- Dating of the solar system—radiometric
- Physics Principles involved

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Ch. 9—Planetary Geology

- Planetary Structure—lithosphere, mantle, crust, core
- Differentiation
- Source of heat
- Cooling off
- Magnetic fields
- Surface shaping (impacts,tectonics,volcanism,erosion)
- Some geology of each body

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Ch. 11—Jovian Planets

- Differences in mass, size, constituents
- Structure—shape, core, magnetic field
- Source of heat for moons
- Colors, gasses, storms, etc

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Ch. S4—Building Blocks

- Fundamental particles & forces
- Quantum Realm:
  - The uncertainty principle
  - Exclusion principle
- Particle properties:
  - Waves
  - Fermions/Bosons
  - Mass, charge, spin
  - Matter/antimatter
- Degeneracy Pressure
- Quantum Tunneling
- Virtual particles

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