Preparation for Test 1

- Do the practice test (Test 1 from Fall 2008)
  - Link on syllabus on angel
- Review the homework. For each question,
  - What is the main idea?
  - What are less important ideas? How are they related to the big ideas?
  - What are details?
- For each class,
  - What are the one or two big ideas? You must understand these.
  - What are less important ideas? How are they related to the big ideas?
  - What are details?

First test

- See practice test (link is on the syllabus)
  - A few questions with verbal, numeric, or graphical answers.
  - No multiple-choice questions.
- Material covered on Wed, 23rd will be on the test.
- First test counts only 5% of course grade.
- Answers for Practice Test will be posted tonight.
- You may bring one sheet of notes to use for Test 1.
  - 8½ ×11". Write on front & back.
- Special office hour
  - Mon, 12:00-1:00 in 3260
- Homework 3 must be handed by noon, Tues, 29th.
  - Answers will be posted afterwards. See link on syllabus.

- What are the one or two big ideas? You must understand these.
- What are less important ideas?
  - Examples of LII
    - Definition
    - Drawing
  - How are they related to the big ideas?
- What are details?

Kepler's Laws

- Hwk1: max is 28
  - If you want a question regraded, write a note on the front & give me the paper.
- Figure added to Homework 2
  - See link on syllabus
- Read pages in Galileo's *Starry Messenger* for Mon
  - See link on syllabus
  - How & when did Galileo know that he had discovered moons of Jupiter?
- The discovery of the laws of motion, the first science.
  - *De Revolutionibus Orbium Coelestium*, Copernicus, 1543
  - *Astronomia Nova*, Kepler, 1609
  - *Philosophiae Naturalis Principia Mathematica*, Newton, 1687
- How Kepler figured out the path of Mars from Tyco's observations.
- Kepler's three laws.

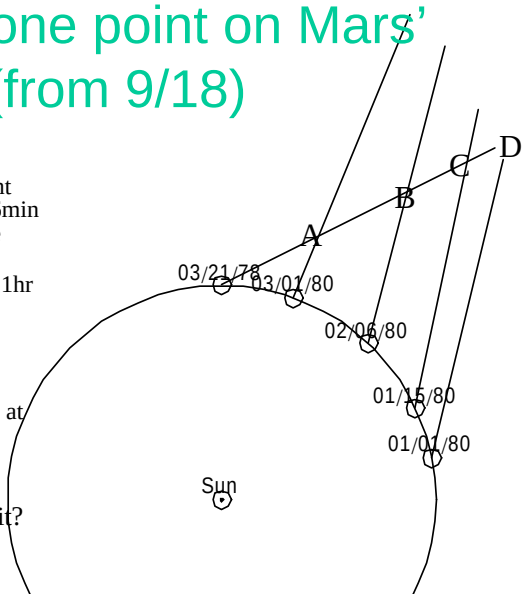
Kepler at 39, Sternwarte Kremsmünster
http://members.nextra.at/stewar/

Copernicus	1473–1543
Columbus sails	1492
Tycho Brahe	1546–1601
Shakespeare	1564–1616
Johannes Kepler	1571–1630
Jamestown	1607
King James Bible	1611
Harvard College	1636
Isaac Newton	1642–1727

Determining one point on Mars' orbit (from 9/18)

- Observations
  - On 21 March 1978, the right ascension of Mars is 7hr 46min (116.5° from the sun on the vernal equinox).
  - On 1 Jan 1980, Mars is at 11hr 06min (166.5°).
  - On 15 Jan 1980, Mars is at 11hr 12min (168.0°).
  - On 6 February 1980 (one Martian year later), Mars is at 11hr 02min (165.5°).
  - On 1 Mar 1980, Mars is at 10hr 30min (157.5°).

1. Which point is on Mars' orbit?
   B



- What are the one or two big ideas? You must understand these.
- What are less important ideas?
  - Examples of LII
    - Definition
    - Drawing
  - How are they related to the big ideas?
- What are details?

- Identify a "big idea," a less important idea, an unimportant detail.

1. #I is __.
   A. BI.
   B. LII.
   C. UD.
2. Which is the biggest idea?

- Ideas & details
  I. The particular dates
  II. The idea of right ascension
  III. That two observation are one Martian year apart.
  IV. The position of the sun on 3/21.
  V. Finding a point on Mars' orbit

- What are the one or two big ideas? You must understand these.
- What are less important ideas?
  - Examples of LII
    - Definition
    - Drawing
  - How are they related to the big ideas?
- What are details?

- Identify a "big idea," a less important idea, an unimportant detail.

1. #I is __. C
   A. BI.
   B. LII.
   C. UD.
2. Which is the biggest idea? u