Astronomy 1210 Course Particulars

- Course Home Page
  http://www.astro.virginia.edu/class/skrutskie/astr121/
  - Three in-class exams - 55% + Final 25%
  - Two Labs (Telescope Observing + Your option) - 10%
  - In-class “wildcards” - 10%

- Textbook: Cosmic Perspective (6\textsuperscript{th} or 5\textsuperscript{th}) edition
  - NO clickers, No supplementary material, just the text

- Exam results and basic course information (and some assignments) will appear on Collab
At the End of the Semester...

- A fairly broad and extensive knowledge of the planets and moons in the solar system and how a perspective on all of these objects leads to appreciation for the prospects of life elsewhere in the Solar System and in the Galaxy.

- An ability to keep current – on your own – with events going on in the night sky, long after this course has ended. “Keep looking up....”

- An ability to track the progress of and results from the vast investment in space exploration that we make as a society and appreciate why these investments are more important than just pretty pictures.
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A Brief Warning

• Yes, this course is a 1000-level “introductory” course, however...
  - The “1000” is an indicator that the course has no prerequisites, not that it is “easy”
  - The information content is dense
  - Astronomy is simply applied physics – be prepared for some math and conceptual physics.
Astronomy 1210 – circa 2012
NOT Your Grandma's Solar System

1972
Astronomy 1210 – circa 2012

NOT Your Grandma's Solar System

Mercury
After a 7-year journey, MESSENGER dropped into orbit on March 18, 2011!
Astronomy 1210 – circa 2012

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Saturn

Cassini Spacecraft Orbital Insertion: June 2004
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Asteroids and Comets
Astronomy 1210 – circa 2012

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Pluto – planet no more...

New Horizons Page
Astronomy 1210 – circa 2012

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Astronomy 1210 – circa 2012

NOT Your Grandma's Solar System
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ca. 1990
Astronomy 1210 – circa 2012

NOT Your Grandma's Solar System

• In the past year...
  – The Dawn spacecraft dropped into orbit around the asteroid Vesta for a year-long exploration
In the past year...

- The Juno mission was launched on its way to orbit Jupiter
- Mars Science Lab was launched and is on its way to Mars
- GRAIL (a lunar gravity mission) launched and just arrived in lunar orbit.
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NOT Your Grandma's Solar System

1972
Astronomy 1210 – circa 2012

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• A new perspective on prospects for life elsewhere
  - Life is more tolerant of extreme environments than previously thought.
  - DNA analysis suggests life likely originated in volcanic vents.
  - Life's prerequisites (especially liquid water) are more prevalent in solar systems.
  - Planets share material. Impacts can transport life naturally from one world to another increasing the odds of survival.
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NOT Your Grandma's Solar System

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NOT Your Grandma’s Solar System

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  - It took until 1995 to find the first one.

http://www.planetary.org/blog/
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The techniques applied to date find “big” planets, but today we are finding earth-sized planets and developing the technology to determine if they are earth-like.