Welcome to this course!

Instructor: Jim Napolitano

Teaching Assistants: Tom Parker and Miranda Nordhaus
What makes astronomy so fascinating?

My theory....

$0 \times \infty = \text{Anything}$
Example: Two Radio Sources

The Crab Nebula

Galaxy M87
Preliminaries: Two Handouts

- Course information (including grading, etc...)
- Syllabus and homework assignments

This is all available at the course web site:
http://www.rpi.edu/dept/phys/Courses/ASTR2050/
“Astronomy” or “Astrophysics”?
Example: Circular Orbits

See Studio Exercise this coming Friday

Orbital period = $T$

"Kepler's Second Law"
This result applies to...

- Planetary motion
- Motion of binary star systems
- Formation of stars and “solar systems”
- Galactic rotation (“dark matter”?)
- The center of M87
- ...

A Quick Tour...

... of our course and the Universe.

Some links:
http://chandra.harvard.edu/
http://www.seds.org/
http://www.davidmalin.com/
http://zebu.uoregon.edu/
http://www.astro.washington.edu/labs/clearinghouse/
http://www.gettysburg.edu/academics/physics/clea/CLEAhome.html
The Pleiades

Trivia: The word for “pleiades” in Japanese is...
An “HR Diagram” for the Pleiades:
The Orion Nebula
The Crab Pulsar

This is an X-ray image from Chandra
The Andromeda Galaxy
The Virgo Cluster
Hubble Deep Field

The target for the Hubble Deep Field was a carefully selected piece of sky near the handle of the Big Dipper (part of the northern circumpolar constellation Ursa Major — the Great Bear). This field is far from the plane of our galaxy and so is "uncluttered" of nearby objects, such as foreground stars. The target field is, by necessity, in the continuous viewing zone (CVZ) of Hubble's orbit, a special region where Hubble can view the sky without being blocked by Earth or interference from the Sun or Moon.

Hubble Deep Field

ST ScI OPO January 15, 1996 R. Williams and the HDF Team (ST ScI) and NASA
Cosmic Microwaves

Enlargements showing small scale heterogeneities

The Milky Way