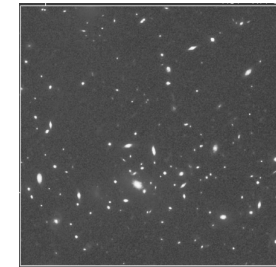
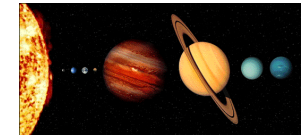


AST 207—29 Aug The Science of Astronomy

- Ed Loh, Loh@msu.edu (355-9200, ext. 2480)
- www.pa.msu.edu/courses/ast207
- Course goals
 - Learn astronomy as a scientist. Emphasize the discovery.
 - Einstein discovered the key idea for his theory of gravity, when a painter fell off a roof: “Then there occurred to me the happiest thought of my life, in the following form. The gravitational field has only a relative existence... for an observer falling freely from the roof of a house there exists... no gravitational field” —A Einstein 1920
 - Focus on cosmology, rather than on all of astronomy
- Outline of cosmology
- 51 Pegasi—Example of a scientific discovery

Cosmology in Outline

- Ancient—200AD
- Copernican Revolution—1600
- What are stars made of? Why do they shine? —1830-1930
- The Big Bang—1927
- Cosmic Radiation—1965
- What is the universe made of?—Present

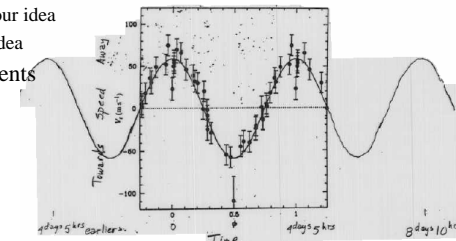


Questions

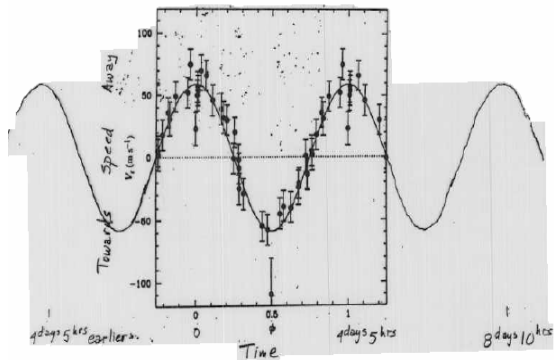
1. Newton figured out the first body of scientific laws on
 - a. Electricity
 - b. Planets
 - c. Genetics
 - d. Motion
2. The oxygen nuclei in the air
 - a. Always existed
 - b. Formed in the sun from simpler nuclei such as hydrogen
 - c. Formed in other stars
 - d. Formed in plants
3. Most of the universe is made of
 - a. Hydrogen
 - b. Helium
 - c. Dark matter
 - d. Dark energy

51 Pegasi

- Michael Mayor & Didier Queloz discovered something important by studying the star 51 Pegasi.
- Steps
 - Examine the data for the facts. Which clues are important?
 - Brainstorming
 - Developing your idea
 - Testing your idea
- Group assignments
 - Recorder
 - Reporter
 - Summarizer



Motion of 51 Peg Away & Towards Us



Summarizing Questions

- What did Mayor & Queloz discover?
- Did they see what they discovered?
- What are the key pieces of evidence?