

*April 27, 2006*

# Agenda

- Announce:
  - Final Projects on Tuesday (no floppy drive)
  - Turn in stuff & take Quizzes 21-24
- Evaluations (will have my own evals @final)
- Discuss Solar Lab
- Review
- Elegant Universe Part II

# Ch. 21—Galaxy Evolution

- Galaxy formation..seeds, protogalactic cloud, etc
- What determines Spiral, elliptical, irregular?
- Starburst galaxies
- AGN
- Quasars
- Supermassive Black Holes

# Ch.22—Dark Matter and the Fate of the Universe

- How do we know there's Dark matter?
- Where is it?
- What is dark matter made of? Machos?  
Wimps?
- Structure Formation
- Structure of the Universe

# Ch. 23—The Beginning of Time

- Big Bang Theory—what is it, evidence for
- Different eras
- GUT
- Inflation
- Nucleosynthesis
- CMBR
- Olber's Paradox

# Lessons which should stay with you:

- Astronomy/Astrophysics/Astrobiology/Cosmology:
  - It's come along pretty well over the last 5,000 years or so
  - It's become quantitative
  - Links all the sciences (physics/chemistry/biology)
  - Links science of the small (subatomic particles) w/ the big (clusters, galaxies)
- The vast range of scales: time, space, mass, energy
  - Rank based on scale
- Concomitant range of perspectives
- What is science?
  - Identify scientific argument from other
- Limits of science
  - Scientists not always right...science converges (self-correcting)
  - Science can't answer some questions
  - Scientific theories can't answer all questions

The most incomprehensible thing  
about the world is that it is comprehensible.

—Einstein

