

## Exploring the Age of the Universe

This week: To explore the scientific understanding of age of the universe.

### Review

- Nature does not give propositions—Science seeks truth, but requires *empiricism* and rests on unprovable tenets: reality, cause and effect, existence of consistent “laws” or natural rules, observations can be valid, induction
- Bible validates empiricism—gaining understanding of truth from observation
- God *reveals* and gives us capacity to reason and understand the revelation

- 1) Introduction: "Observing" time and space:
  - a) *Space*: sit at one time, record how “big” something is. Assume it stays the same as it moves.
  - b) *Time*: Sit at one spot, record how things change. Assume constant rates for same “events”
- 2) Assumptions
  - a) Assume scientists are honest, open-minded, non-believers.
  - b) Science is generally trustworthy (empiricism is valid)
  - c) Uniformity of natural law: Jer. 33:25-26
- 3) Big Bang: attempt to figure out the history of the universe, given fixed laws.
  - a) Creation, then expansion.
  - b) Cosmic Microwave Background (CMB)
    - i) Cartoon of the universe
    - ii) Black Body Radiation
    - iii) Inflation
    - iv) Observations of the CMB radiation
  - c) Scripture? God "stretches" the heavens: Isa. 40:22, 42:5; Job 9:8, 26:7; Ps. 104:1-2
  - d) The life cycle of a star
    - i) Hertzsprung-Russel Diagram
    - ii) Ages are related to known physics
  - e) Measuring the position and speed of objects
- 4) Illusion of age? Firmly established? Real stars? Real galaxies? Ps. 78:69, 89:11; Ps. 119:89; Isa. 42:5
- 5) Relativity of Time as a method of reconciliation between 6000 years with 14 billion years?  
*Genesis and the Big Bang: The Discovery Of Harmony Between Modern Science And The Bible*, Dr. Gerald Schroeder

*Next week*: The age of the earth