

Ballot

Name 10 Ballots

HPS 2580

Modern Cosmology

Fall 1997/98

Topics

Top Topics

Introduction (2 weeks)

Cosmology 001: An introduction to relativistic world building

Ancient (1900-1940) (4 weeks)

- 6 ~~III~~ I Einstein's Universe: the first relativistic cosmology
- 5 ~~III~~ Mach's Principle: philosophy meets physics
- 5 ~~III~~ The paradox of Newtonian cosmology
- 8 ~~III~~ III De Sitter's Universe: an unexpected competitor; an early singularity ←
- 4 ~~III~~ Friedman's universes: the birth of dynamical cosmologies
- 1 I Lemaitre's universe: a hot, radioactive big bang
- 3 III Neo-Newtonian cosmology of Milne and McCrea
- 2 II Milne's kinematical relativity: another way
- 7 ~~III~~ II Hubble and the discovery of the expansion of the galaxies ←

Medieval (1940-1970) (4 weeks)

Big bang cosmology and the formation of the lighter elements:

- 8 ~~III~~ III Gamow, Alpher, Herman ←
- 2 II Dicke, Peebles and more.
- 7 ~~III~~ II Steady state cosmology: Bondi, Gold and Hoyle. ←
- 4 III The debate
- 1 I Observation of the 3°K background microwave radiation

Modern (1970-2000) (4 weeks)

- 9 ~~III~~ III The very early universe: inflationary cosmology ←
- 3 III Was there a big bang? Heretical views (e.g. Arp)
- 5 ~~III~~ The singularity theorems
- 0 — Alfvén's plasma cosmology
- 4 III God, creation and the big bang
- 6 ~~III~~ I Dark matter ←
- 5 ~~III~~ Is the universe even roughly homogeneous?

Your addition: Hawking's Cosmology
Penrose's Weyl curvature hypothesis