

- Ch. 1 The Nature of Physical Science
- Ch. 2 Early Astronomy
- Ch. 3 Cosmology before Physics
- Ch. 4 ~~The History of Astronomy~~ The Age of Observation
- Ch. 5 ~~The Newtonian Universe~~ Gravitation
- Ch. 6 Matter in Motion - Solids, Liquids and Gases
- Ch. 7 Radiation and Matter
- Ch. 8 The Structure of the Atom
- Ch. 9 Quantum Physics and Chemistry.
- Ch. X Relativity
- Ch. 10 Nuclear Physics
- Ch. 11 The Sun
- Ch. 12 The Stars
- Ch. 13 The Origin of the Chemical Elements
- Ch. 14 The Solar System
- Ch. 15 The Origin of the Solar System
- Ch. 16 Cosmology with Modern Physics
- Ch. 17 Science and Society - Nuclear Fusion
- Space Research ?
- Ch. 18 New Frontiers in Physics - Particle Physics
Black and White Holes ?

The material in the first week of Physics 040 on astronomy and physics up to the time of Newton is not covered in much detail in Jastrow and Thompson.

An extended set of notes will be placed in the Physics Library. Ask ~~the librarian~~ to show you them; they will be kept in her office, for use in the Library only. They cannot be signed out except for copying on the Physics Department copiers in the General Office. The General Office will make a small charge for student copying.

Much more extensive background material (not required reading for the course) could be found in the following books, all in the Physics Library:

Astronomical background:

- * Hoyle, 'Astronomy', Chapters 1-5. Macdonald 1962 QB15.H8
- * Baker and Fredrick, 'Astronomy', Chapter 1-3, Ch.6. Van Nostrand 1971 QB45.B1

Histories:

- * Koestler, 'The Sleepwalkers'. Hutchinson 1959 BL245.K78
- * ed. Munitz, 'Theories of the Universe'. Free Press 1957 QB981.M9
- * Casper and Noer, 'Revolutions in Physics'. Norton 1972 QC125.2.C36
- Pannekoek, 'A History of Astronomy'. Allen and Unwin 1961 QB15.P19
- Page, 'Astronomy - How Man Learned About The Universe'. Addison-Wesley 1971 QB44.P24
- Berry, 'A Short History of Astronomy'. Dover 1961 QB15.B5

Individuals:

- Heath, 'Aristarchos of Samos'. Oxford Univ. Press 1913 QB21.H43
- Kuhn, 'The Copernican Revolution'. Harvard Univ. Press 1957 QB41.G815K8
- Dreyer, 'Tycho Brahe'. Dover 1963 QB36.B8D77
- Koestler, 'The Watershed - Biography of Kepler'. Hutchinson 1959 QB36.K3K78
- de Santillana, 'The Crime of Galileo'. Univ. of Chicago Press 1955 QB36.G2D4
- Drake, 'Discoveries and Opinions of Galileo'. Doubleday 1957 QB36.G1A
- Geymonat, 'Galileo Galilei'. McGraw-Hill 1965 QB36.G2G39

- * these books are on the Reserve Shelf for Physics 040 in the Physics Library

Koestler's books stress the rôle of the personalities and backgrounds of the Sixteenth- and Seventeenth-Century astronomers in shaping the discoveries that they made. They are a very readable account of the scientific life of these times.

Munitz's book is a collection of extracts from original scientific papers, etc. tracing the development of cosmology from Babylonian times to the modern era.

de Santillana's book is an excellent account of the conflict between Galileo's science and his Church.