

Astronomy II

Astrophysical hydrodynamics: equilibria of self-gravitating masses; fluid instabilities in stars and in the interstellar medium; astrophysical outflows; accretion; shock waves and supernovae.

Radiation processes: emission, absorption, scattering. Heat transfer in stellar interiors.

Stellar spectra. Physical processes in the interstellar medium.

Nuclear astrophysics: sources of stellar energy and origin of chemical elements.

Optional: cosmic rays and particle acceleration; sources of nonthermal radiation.

Sources: R.L.Bowers, T.Deeming, "Astrophysics", v. 1, 2

M.Harwit, "Astrophysical Concepts"

D.Maoz, "Astrophysics in a Nutshell"