1. Element abundances and Big Bang Nucleosynthesis

2. Cosmology: Baryons, the Cosmic Microwave Background, and Dark Matter/Energy

3. Nuclear reactions in stars
   3.1 hydrogen burning: pp chain, CNO cycles
   3.2 red giant evolution: $3\alpha$ reaction and $^{12}\text{C}(\alpha,\gamma)$

4. Solar neutrinos, neutrino oscillations, matter effects
   4.1 neutrino-nucleus reactions
   4.2 detectors
   4.3 neutrino oscillations and the MSW effect
   4.4 neutrino properties and open questions

5. Core-collapse supernovae

6. Nova and supernova nucleosynthesis
   6.1 in novae
   6.2 the s-process
   6.3 the r-process
   6.4 neutrino process

7. Neutron stars

8. Cosmic rays
   8.1 composition and sources
   8.2 very high energies and the GZK cutoff
   8.3 atmospheric neutrinos
   8.4 $\gamma$-ray lines
   8.5 $\gamma$-ray bursts