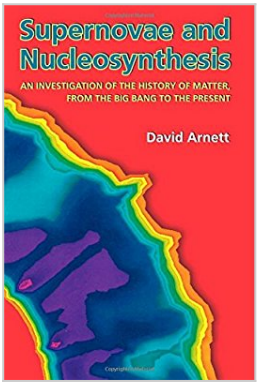

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The narrative begins with the clues (primarily the solar system abundance pattern), the constraining physics (primarily nuclear and particle physics), and the thermonuclear burning in the Big Bang itself. It continues with a step-by-step description of how stars evolve by nuclear reactions, a critical investigation of supernova explosion mechanisms and the formation of neutron stars and of black holes, and an analysis of how such explosions appear to astronomers (illustrated by comparison with recent observations). It concludes with a synthesis of these ideas for galactic evolution, with implications for nucleosynthesis in the first generation of stars and for the solar system abundance pattern. Emphasis is given to questions that remain open, and to active research areas that bridge the disciplines of astronomy, cosmochemistry, physics, and planetary and space science. Extensive references are given.

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