



## Evolution of Stars and Stellar Populations

By Salaris, Maurizio; Cassisi, Santi

Wiley, 2006. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: Preface.1. Stars and the Universe.1.1 Setting the stage.1.2 Cosmic kinematics.1.2.1 Cosmological redshifts and distances.1.3 Cosmic dynamics.1.3.1 Histories of  $R(t)$ .1.4 Particle- and nucleosynthesis.1.5 CMB fluctuations and structure formation.1.6 Cosmological parameters.1.7 The inflationary paradigm.1.8 The role of stellar evolution.2. Equation of State of the Stellar Matter.2.1 Physical conditions of the stellar matter.2.1.1 Fully ionized perfect gas.2.1.2 Electron degeneracy.2.1.3 Ionization.2.1.4 Additional effects.3. Equations of Stellar Structure.3.1 Basic assumptions.3.1.1 Continuity of mass.3.1.2 Hydrostatic equilibrium.3.1.3 Conservation of energy.3.1.4 Energy transport.3.1.5 The opacity of stellar matter.3.1.6 Energy generation coefficient.3.1.7 Evolution of chemical element abundances.3.1.8 Virial theorem.3.1.9 Virial theorem and electron degeneracy.3.2 Method of solution of the stellar structure equations.3.2.1 Sensitivity of the solution to the boundary conditions.3.2.2 More complicated cases.3.3 Non-standard physical processes.3.3.1 Atomic diffusion and radiative levitation.3.3.2 Rotation and rotational mixings.4. Star Formation and Early Evolution.4.1 Overall picture of stellar evolution.4.2 Star formation.4.3 Evolution along the Hayashi track.4.3.1 Basic properties of homogeneous, fully convective stars.4.3.2 Evolution until hydrogen burning ignition.5. The Hydrogen Burning Phase.5.1 Overview.5.2 The nuclear reactions.5.2.1 The p-p chain.5.2.2 The CNO cycle.5.2.3 The secondary elements: The case of  $^2\text{H}$  and  $^3\text{He}$ .5.3 The central H-burning phase in low main...



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