

FC1.1 General Astrophysics



Supervisors: **A. Crida, M. Faurobert, P. de Laverny, C. Benoist**

Contact

✉ crida@oca.eu

☎ +33492003052 (supervisor)

Bibliography / links

Astrophysics of Planet Formation
Philip J. Armitage, CUP, 2013

An Introduction to Stellar Astrophysics
Francis Leblanc, Ed. Wiley, 2011

La Voie Lactée
Françoise Combes & James Lequeux, EDP Sciences, Savoirs Actuels, 2013

Extragalactic astronomy & cosmology : an introduction
Peter Schneider, Springer, 2006

Contents

Part 1: Planetology

by AURÉLIEN CRIDA

1. Definition of planet, from the ancient Greeks to modern astronomy
2. Internal structure of terrestrial and giant planets
3. Planetary formation: a global picture
4. Exoplanets: detection methods & statistics
5. Applications, Exercices, Discussions.

Part 2: Stellar Physics

by MARIANNE FAUROBERT

1. How do we measure distances, luminosities, radius and masses of stars?
2. Stellar spectra and classification
3. An overview of stellar evolution
4. Double stars
5. Our star: the Sun. Sun-Earth relations

Part 3: The Milky way and its Interstellar Medium

by PATRICK DE LAVERNY

1. The Milky Way: global description of the Galaxy and the Local Group
2. The Galactic interstellar medium: atomic, molecular and dust components
3. The Solar vicinity: stellar and interstellar content
4. The Galactic stellar components: characteristics of the stellar populations
5. The history of the Milky Way: chemo-dynamical evolution

Part 4: Cosmology

by CHRISTOPHE BENOIST

1. Galaxies & galaxy clusters – Physical properties and observational signatures
2. Measuring galaxy distances
3. From receding galaxies to an expanding universe
4. Some basics about dark matter and dark energy