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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Extrasolar Planets; Contents; Prolog; Preface; List of Contributors; 1 Planetary Masses and Orbital Parameters from Radial Velocity Measurements; 1.1 Exoplanet Detection; 1.2 Radial Velocity in Astrometric Elements; 1.3 Orbital Fits from Radial Velocity Curves; 1.3.1 Primary Parameters; 1.3.2 Secondary Parameters; 1.3.3 N-Body Fits; 1.4 Coordinate Systems and Equations of Motion; 1.4.1 Barycentric Hamiltonian Equations; 1.4.2 Jacobi Hamiltonian Formalism; 1.4.3 Poincare Hamiltonian Formalism; 1.4.4 Generalized Orbital Elements and Delaunay Variables 1.4.5 Comparisons Between Coordinate Systems 1.4.6 The Conservation of the Angular Momentum; 2 Terrestrial Planets in Extrasolar Planetary Systems; 2.1 Introduction; 2.2 The Methods of Investigation; 2.3 Basics of the Formation of Terrestrial Planets; 2.4 Stability Studies of Terrestrial Planets; 2.4.1 The G2 Systems and Gliese 777A; 2.4.2 Theoretical and Numerical Stability Investigation of the G4 and EPS HD108874; 2.5 A Global Approach: The Exocatalogue; 2.6 Terrestrial

Planets in Multiplanetary Systems; 2.6.1 The Changing Story of HD74156; 2.7 Conclusions
3 Mission Requirements: How to Search for Extrasolar Planets 3.1 Introduction; 3.2 Formulation of the Problem and High-level Scientific Requirements; 3.3 Comparative Planetology; 3.4 Methods and the Need to go into Space; 3.5 Space Missions; 3.5.1 MOST - The First Step; 3.5.2 CoRoT - The First True Exoplanetary Mission; 3.5.3 Kepler - The Exploration Continues; 3.5.4 The Role of the Herschel Mission in the Search for Other Earths; 3.5.5 GAIA - The First Global Survey Instrument and the Cosmic Census; 3.5.6 SIM - Planet Quest
3.6 Darwin and the Terrestrial Planet Finder(s) - Other Worlds with Life as we Know it 3.6.1 Nulling Interferometry; 3.6.2 Background and Foreground Flux; 3.6.3 Model of an Exosolar System; 3.7 The Future - Mission Accomplished?; 4 Biomarkers Set in Context; 4.1 Introduction; 4.2 Biomarkers; 4.3 Biomarker Signatures in Different Wavelength Ranges; 4.4 Potential Biomarkers; 4.5 A Habitable Planet; 4.6 Oxygen and Ozone Production on Earth; 4.7 Cloud Features; 4.8 Biomarkers and their Evolution over Geological Times on Earth; 4.9 Planets around Different Stars; 4.10 Abiotic Sources
4.11 Biomarkers Detection Set in Context 4.11.1 Temperature and Radius of the Planets; 4.12 Orbital Flux Variations; 4.13 Summary; 5 The Formation of Resonant Planetary Systems; 5.1 The Solar System; 5.2 Extrasolar Systems in Mean-motion Resonance; 5.3 Planet-Disk Interaction; 5.4 Resonant Capture; 5.4.1 Hydrodynamical Studies; 5.4.2 Forced Migration; 5.4.3 Second Fundamental Model of Resonance; 5.4.4 Outcome of Resonant Encounters; 5.5 Specific Systems; 5.5.1 GJ 876: A Case of Adiabatic Migration; 5.5.2 Formation of Systems HD 128311 and HD 73526 through Mixed Scenarios; 5.6 Summary
6 Impact of Stellar Activity on the Evolution of Planetary Atmospheres and Habitability

Sommario/riassunto

This latest, up-to-date resource for research on extrasolar planets covers formation, dynamics, atmospheres and detection. After a look at the formation of giant planets, the book goes on to discuss the formation and dynamics of planets in resonances, planets in double stars, atmospheres and habitable zones, detection via spectra and transits, and the history and prospects of ESPs as well as satellite projects. Edited by a renowned expert in solar system dynamics with chapters written by the leading experts in the method described -- from the US and Europe -- this is an ideal textbook for g
