

Lensing Basics Outline

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Lecture I: Introduction

- What is lensing?
- Brief history of lensing
- Why use lensing?

Lectures II and III: Basic theory

- Lens equation
- Fermat potential and time delays
- Magnification and image distortion
- Critical curves and caustics
- General properties of lenses
- Mass-sheet degeneracy

Lecture IV: Simple lens models

- Spherically symmetric mass distributions
- Singular isothermal sphere/ellipsoid
- Power-law mass distribution and its applications