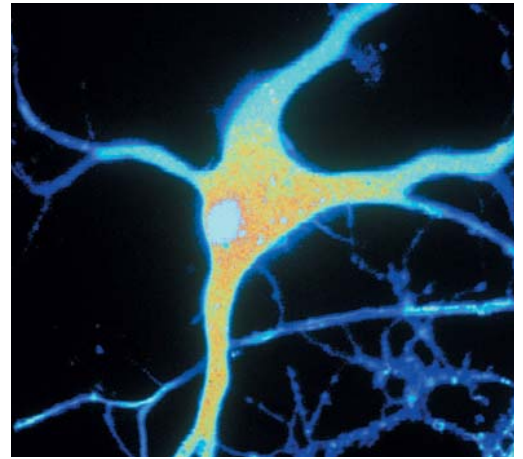
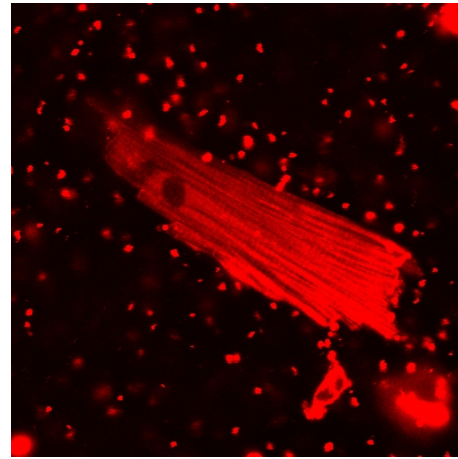
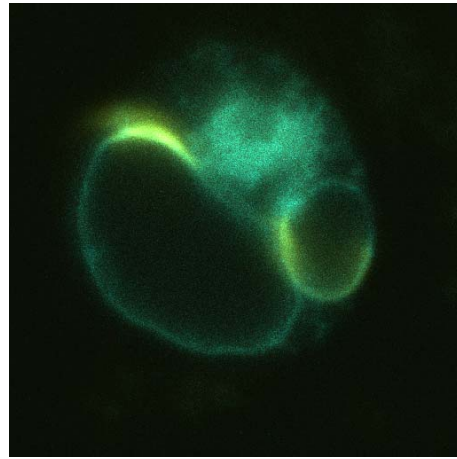
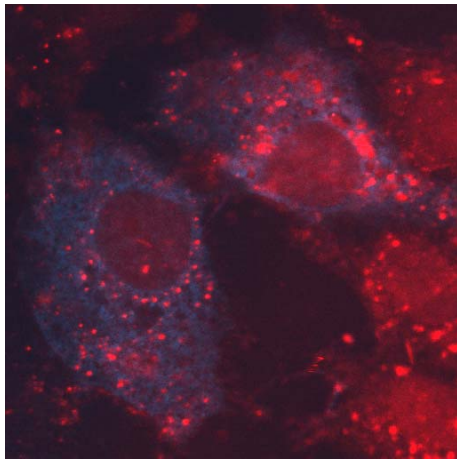


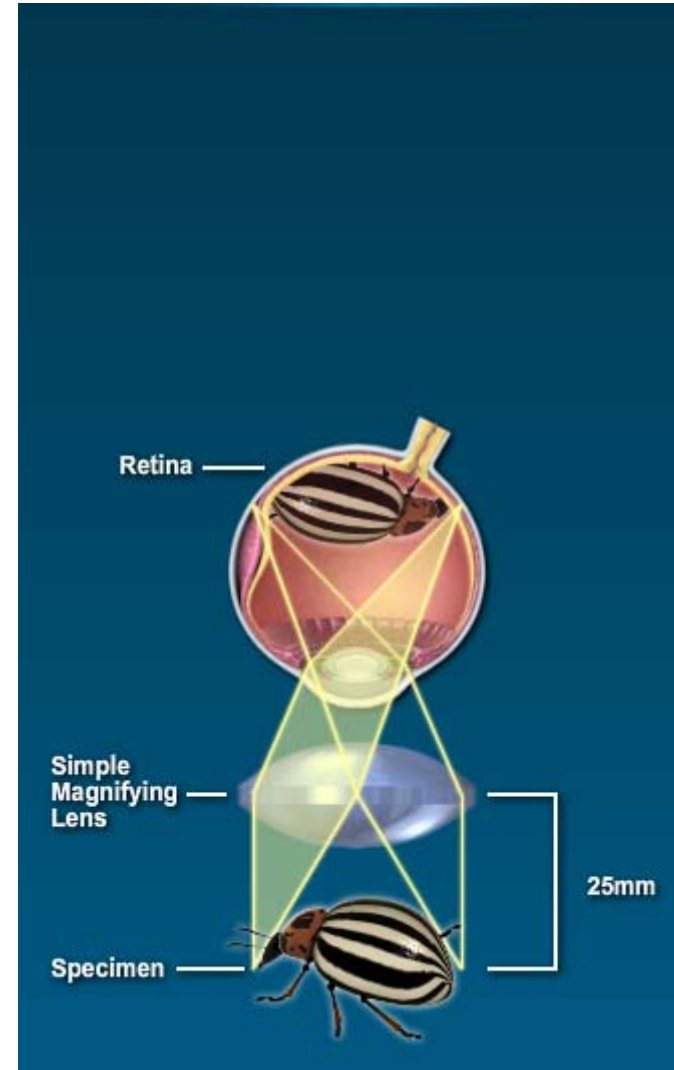
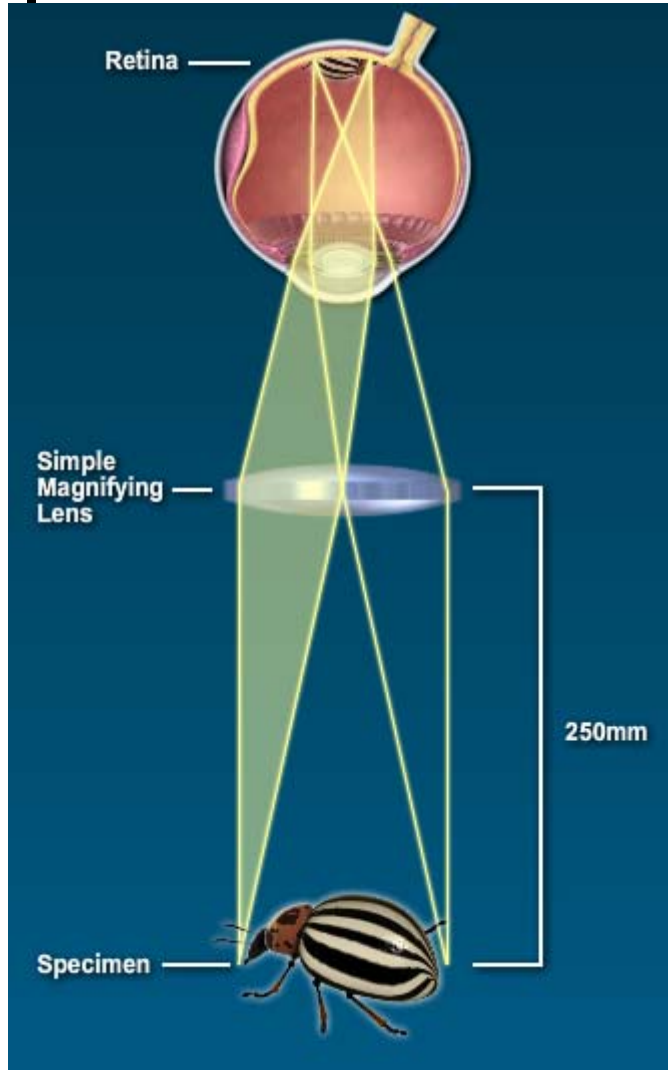


Basic microscopy



Basic microscopy

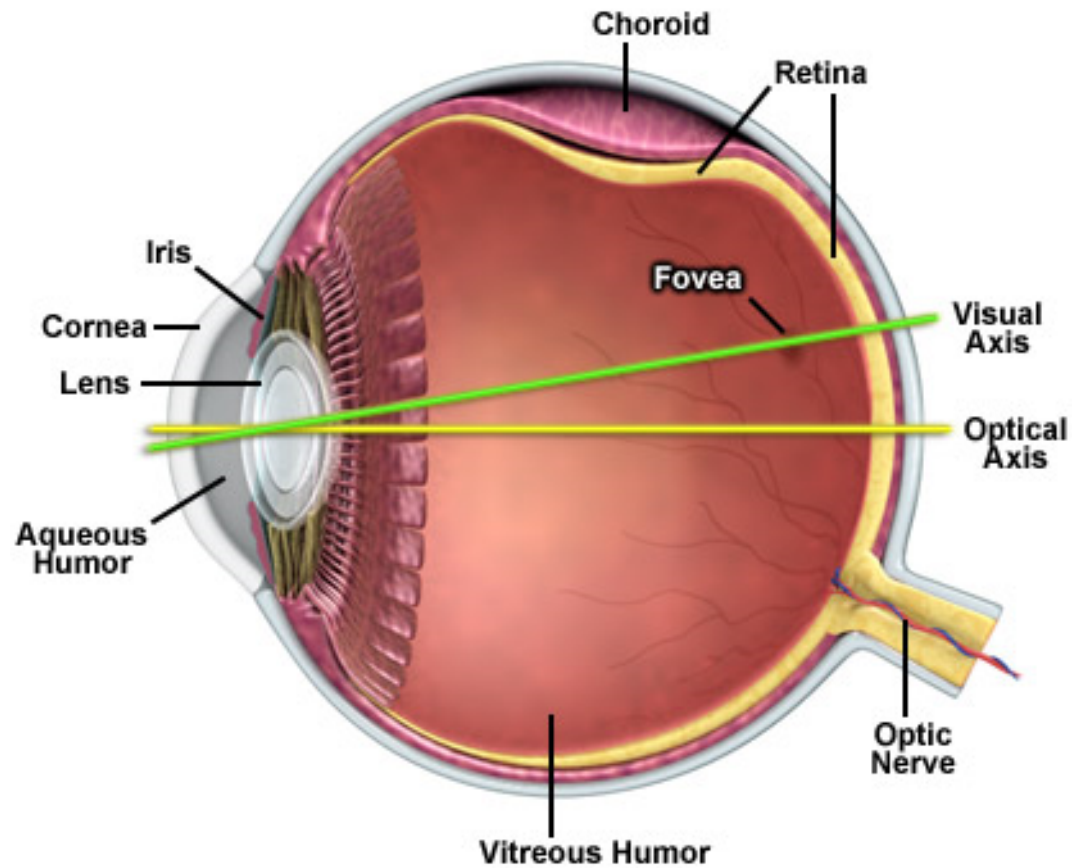
The concept of magnification





Basic microscopy

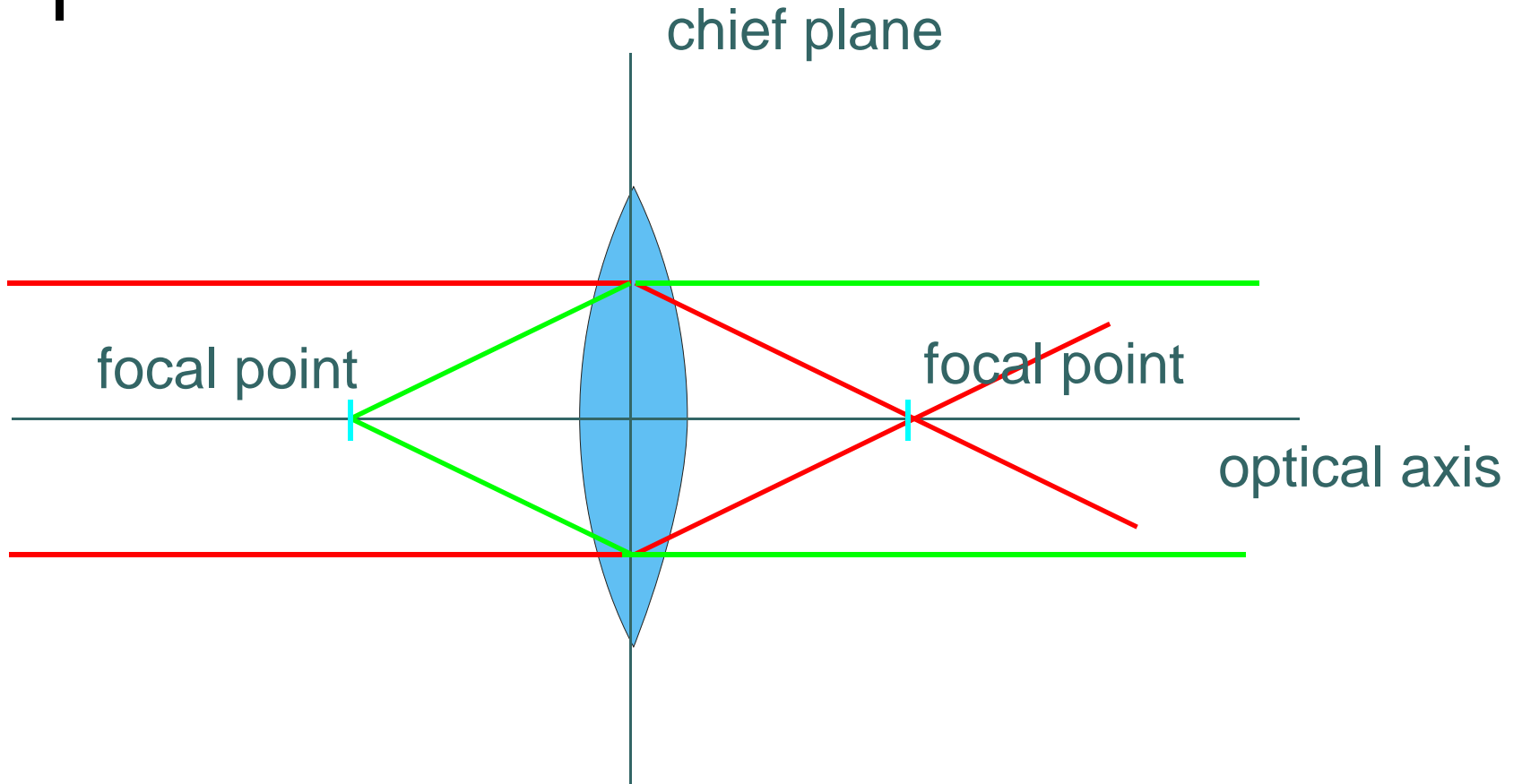
The resolution of the human eye





Basic geometrical optics

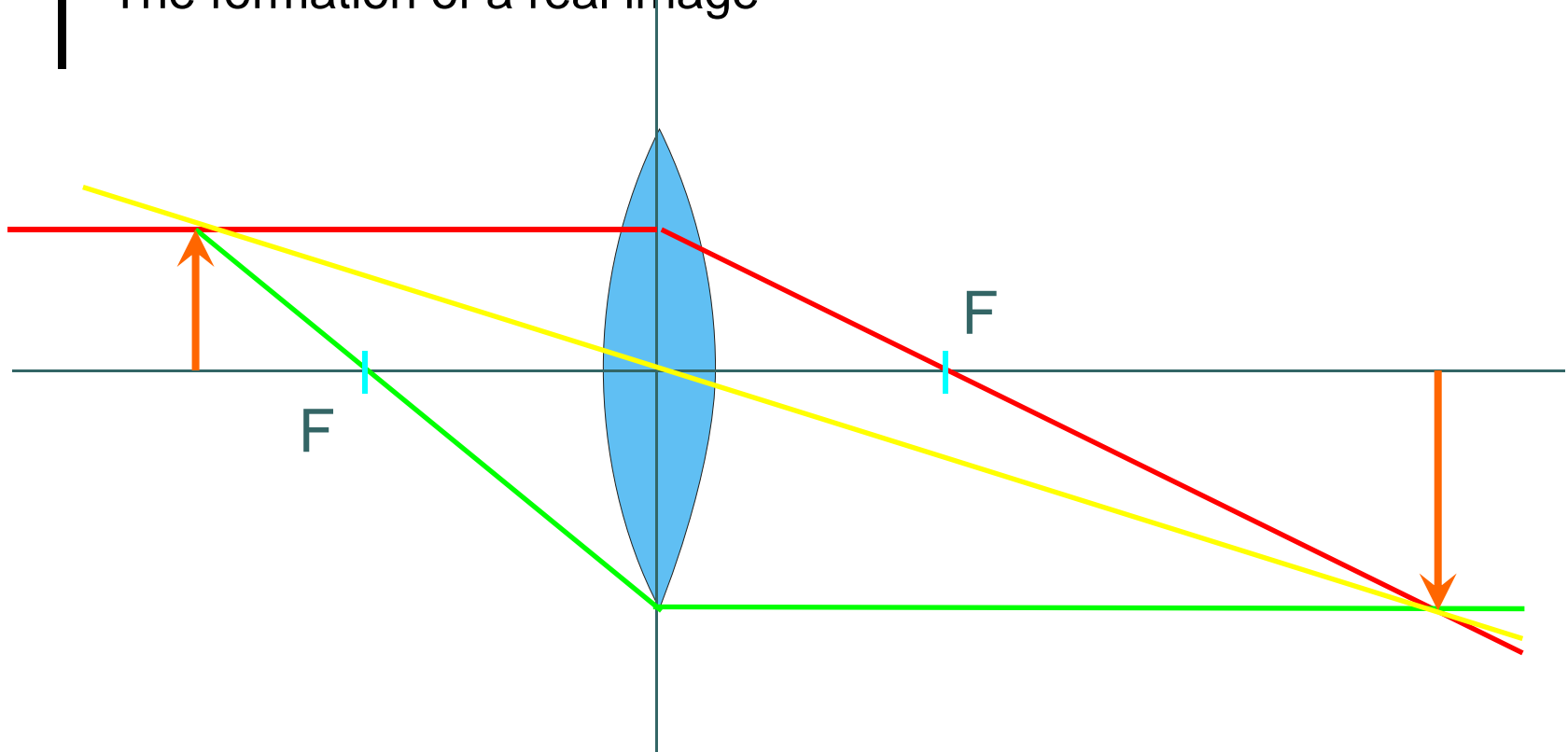
The focal point





Basic geometrical optics

The formation of a real image

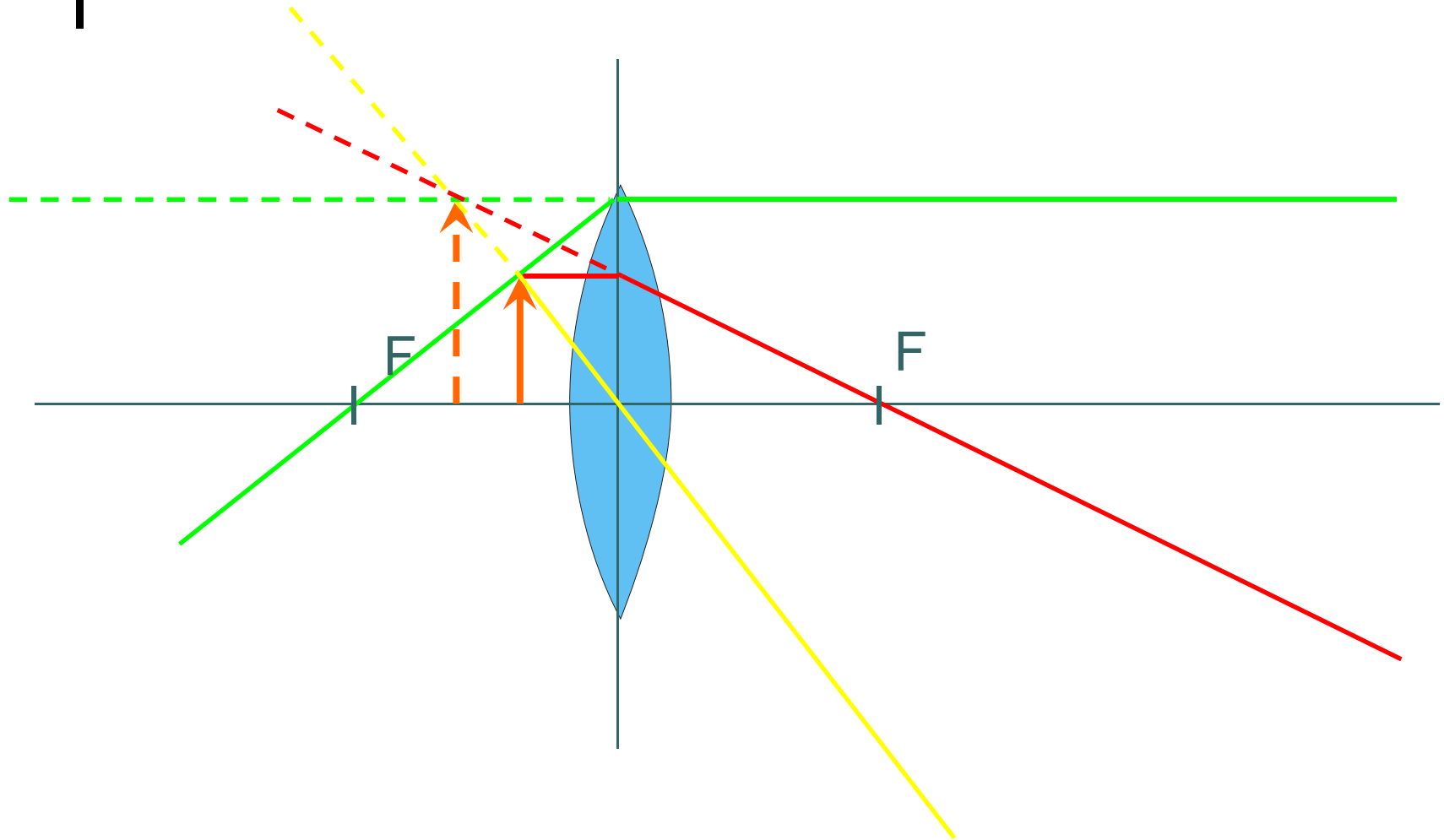


1. A light ray passing through the center of a lens is not deviated.
2. A light ray travelling parallel with the optical axis will pass through the rear focal point.
3. A ray passing through the front focal point will be diffracted in a direction parallel to the optical axis.



Basic geometrical optics

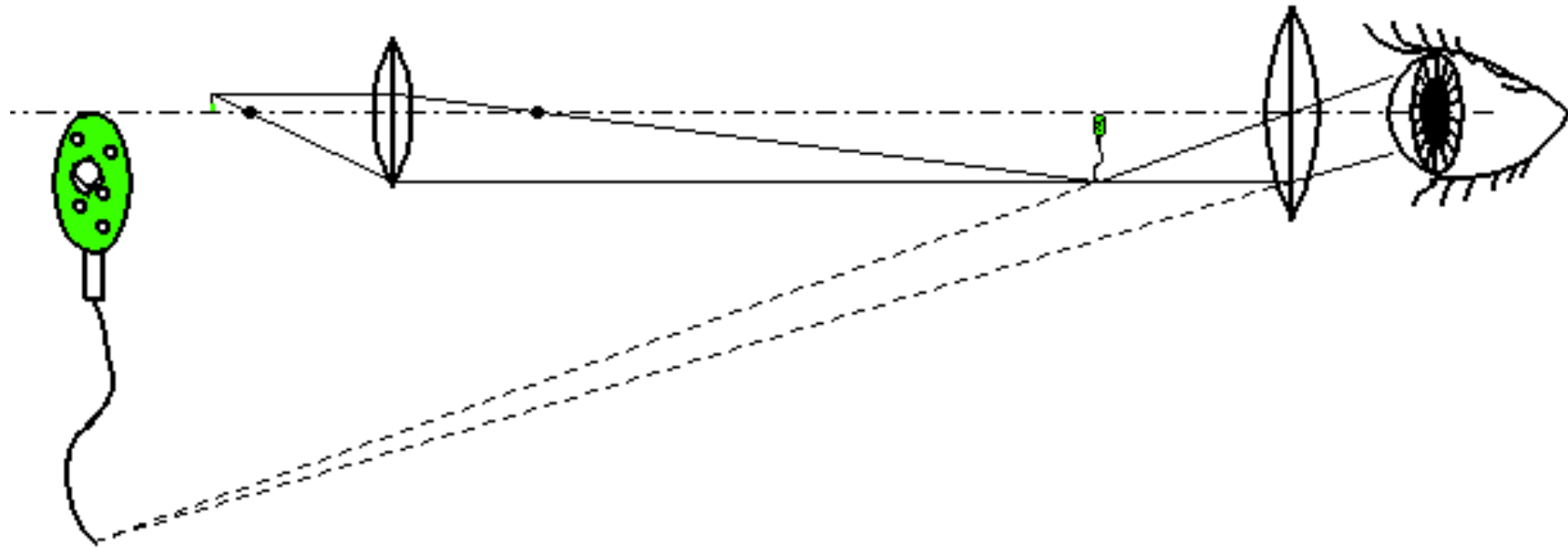
The formation of a virtual image





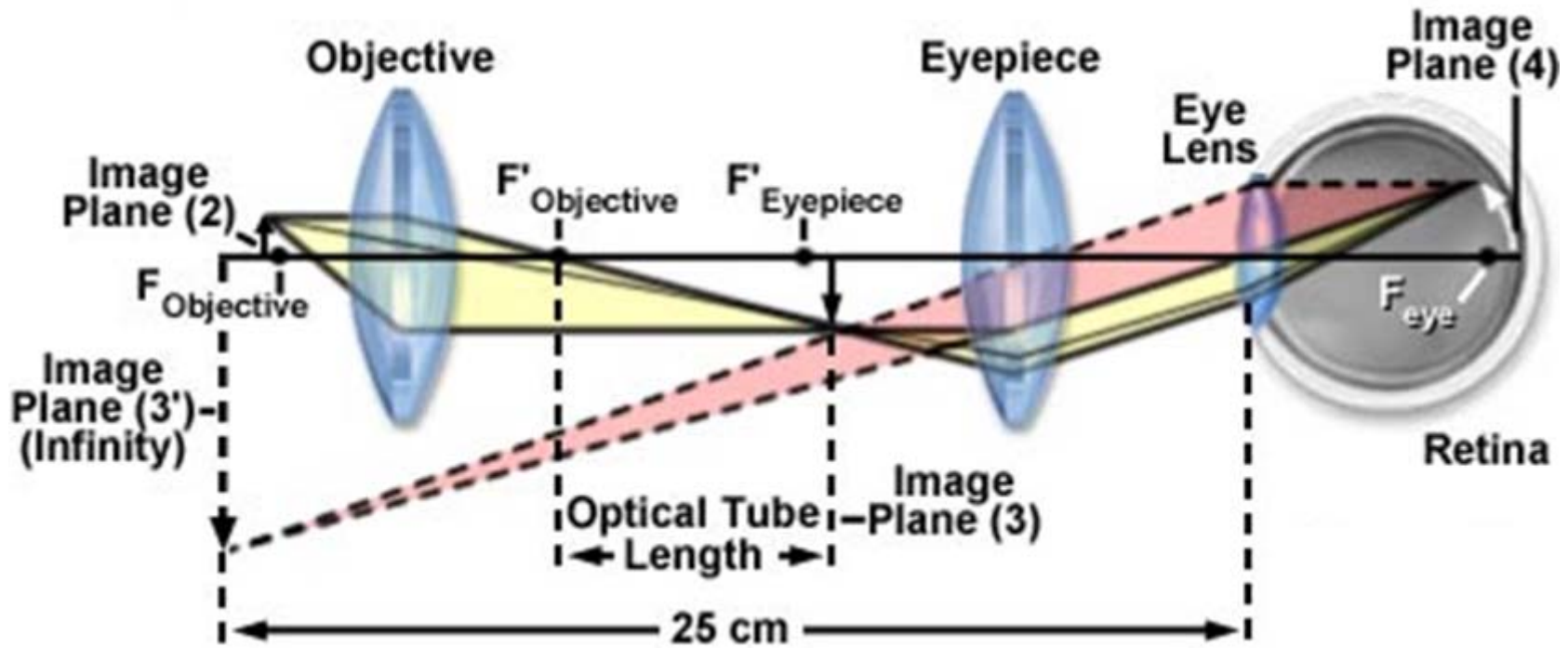
Basic geometrical optics

The compound microscope



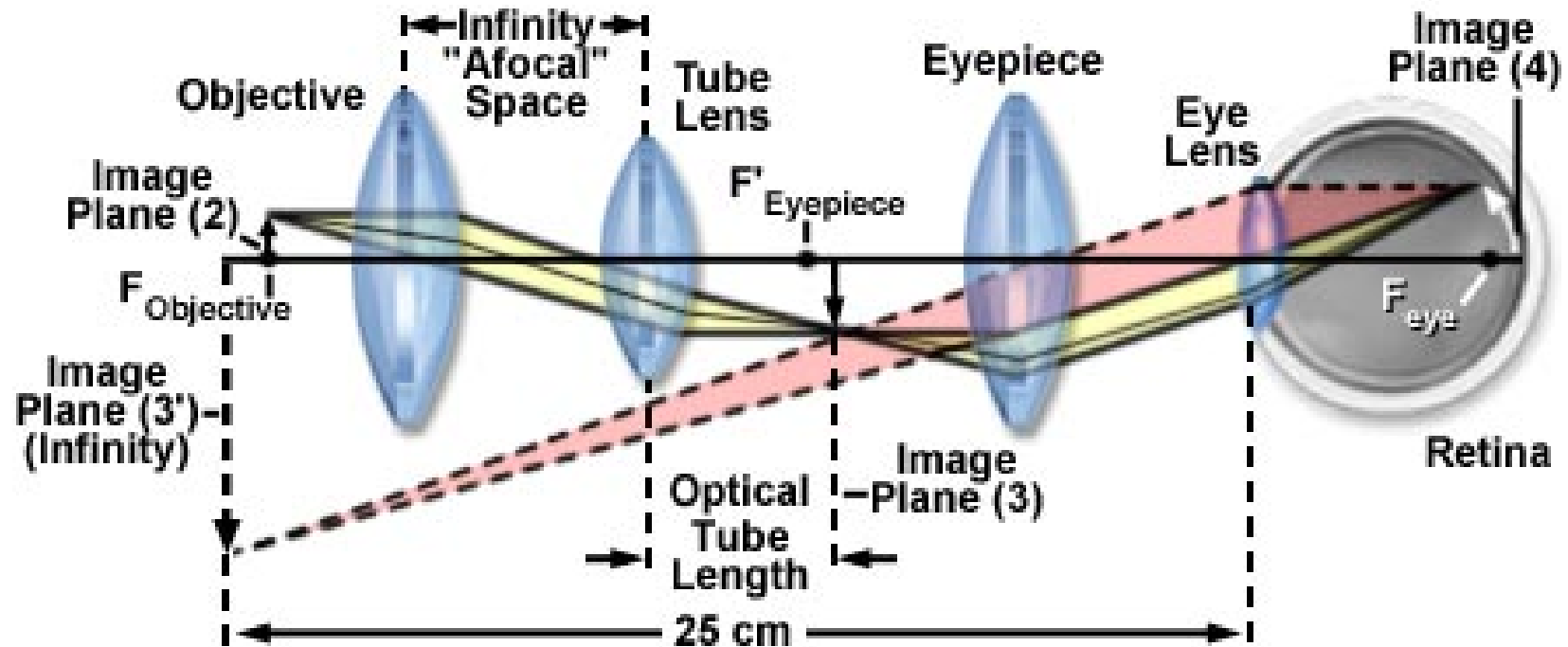
Basic microscopy

Conjugate field planes in a compound microscope



Basic microscopy

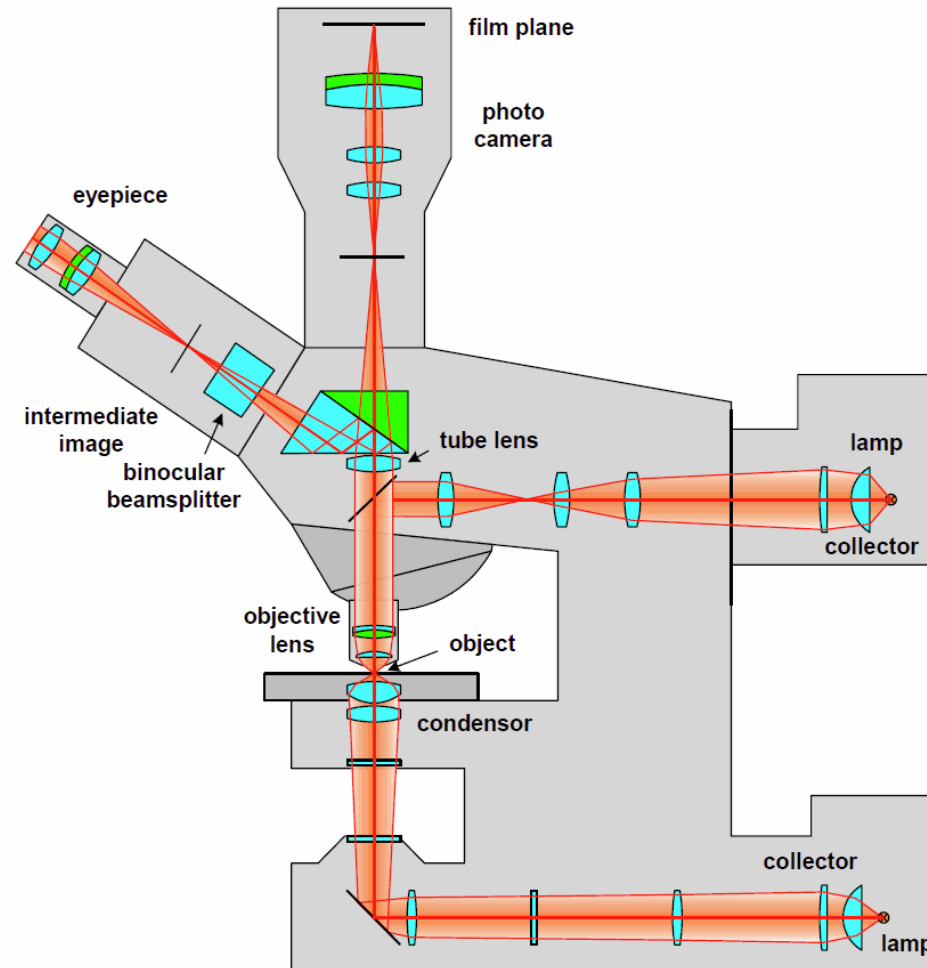
Infinity corrected microscopes





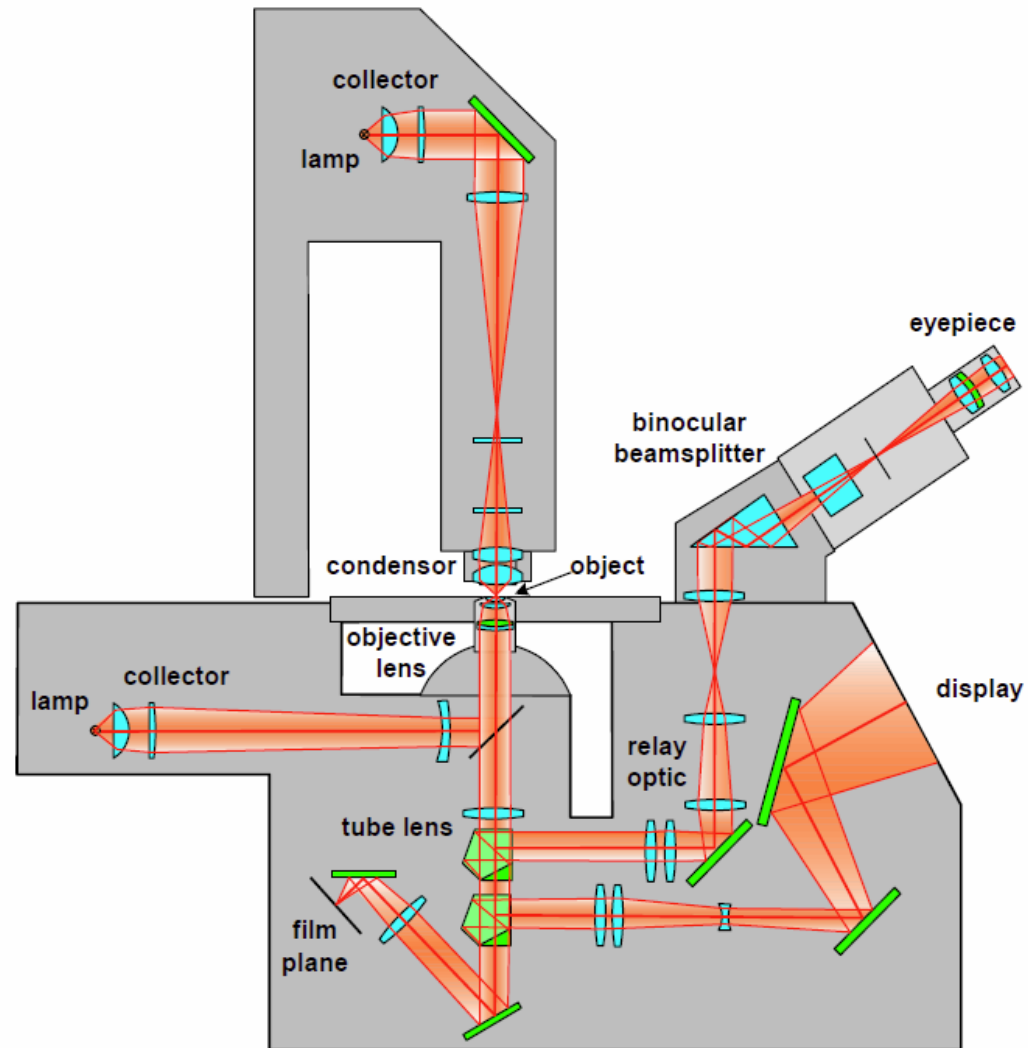
Basic microscopy

The beam path in upright microscopes



Basic microscopy

The beam path in inverted microscopes



Basic microscopy

Microscope components

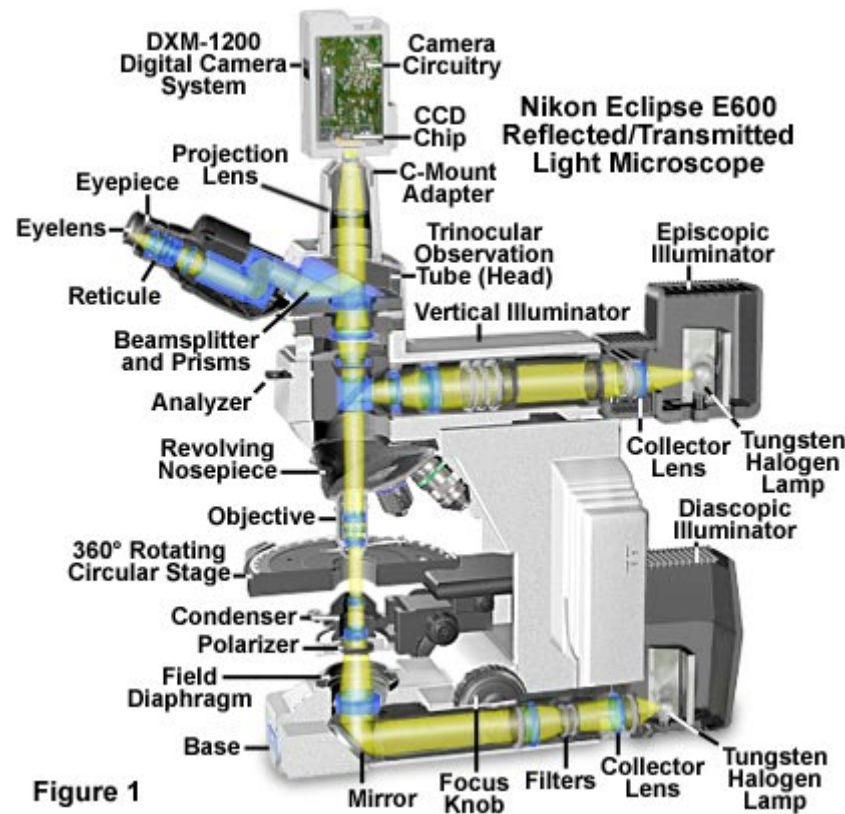
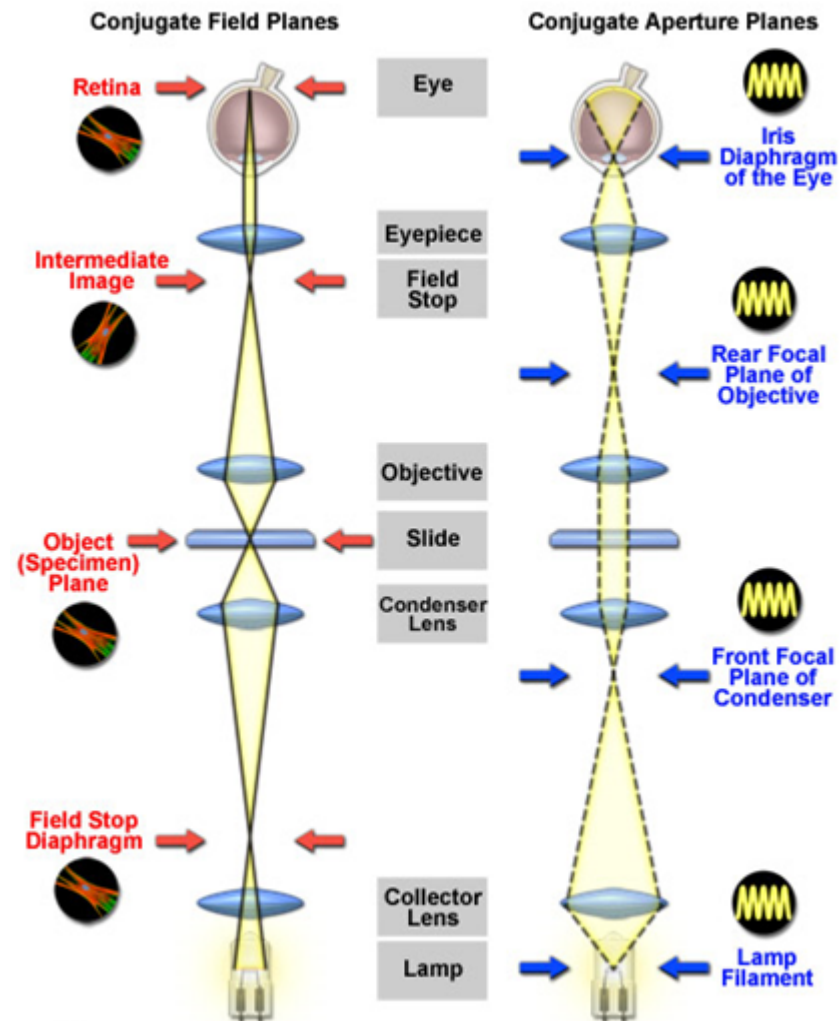


Figure 1

Microscope Component	Attributes
Illuminator	Light Source, Collector Lens, Field Diaphragm, Heat Filters, Light Balancing Filters, Diffuser, Neutral Density Filters
Light Conditioner	Condenser Iris, Darkfield Stop, Aperture Mask, Phase Annulus, Polarizer, Off-Center Slit Aperture, Nomarski Prism, Fluorescence Excitation Filter
Condenser	Numerical Aperture, Focal Length, Aberrations, Light Transmission, Immersion Media, Working Distance
Specimen	Slide Thickness, Cover Glass Thickness, Immersion Media, Absorption, Transmission, Diffraction, Fluorescence, Retardation, Birefringence
Objective	Magnification, Numerical Aperture, Focal Length, Immersion Media, Aberrations, Light Transmission, Optical Transfer Function, Working Distance
Image Filter	Compensator, Analyzer, Nomarski Prism, Objective Iris, Phase Plate, SSEE Filter, Modulator Plate, Light Transmission, Wavelength Selection, Fluorescence Barrier Filter
Eyepiece	Magnification, Aberrations, Field Size, Eye Point
Detector	Human Eye, Photographic Emulsion, Photomultiplier, Photodiode Array, Video Camera

Basic microscopy

Conjugate focal planes for Köhler illumination





Basic microscopy

Steps in establishing Köhler illumination

See

<http://zeiss-campus.magnet.fsu.edu/tutorials/basics/microscopealignment/indexflash.html>

or

<http://www.microscopyu.com/tutorials/java/kohler/index.html>

For Java Applets