

What to expect: Eye, Camera, and Telescope

During this week we will put together the material we covered over the last two weeks to better understand how the human eye works.

Knowing properties of lenses is also very useful in understanding how cameras work. Photography and cinematography are based on fully realizing the potential of the optical equipment for artistic expression, as Ansel Adams expresses it: "You don't take a photograph, you make it."

As third topic we want to explore another optical instrument, the telescope. Specifically, we want to consider a refractive telescope, which basically consists of two converging lenses. Telescopes are made for viewing distant objects, so the light rays coming into the telescope are parallel. For viewing those objects, the telescope needs to produce outgoing parallel rays, which can be focused on the retina by a relaxed eye. Thus, a telescope is essentially an optical instrument that takes incoming parallel rays and converts them to outgoing parallel rays, while creating images that are magnified.