

1. You have three polarizing filters, which stack on top of one another to see how much light will pass through. You first arrange the polarizers such that the middle polarizer's axis is 17.0° clockwise to that of the bottom polarizer, and the top polarizer's axis is 32.0° counterclockwise to that of the bottom polarizer. You shine unpolarized light on the stack, and measure the intensity of the light that passes through as 53.0 W cm^{-2} . Now you remove the middle polarizer and shine the same light on the remaining two polarizers. What intensity will you measure?
2. You have a refracting telescope with an objective lens of focal length 100.0 cm and an an ocular lens of focal length 18.0 cm. What is your telescope's angular magnification? You use your telescope to look at the Rockefeller Chapel, which is 200.7 ft tall, from 2.00 mi away. What is the height of the image formed by the objective lens? What is the angular size of the image that you view through the ocular lens?