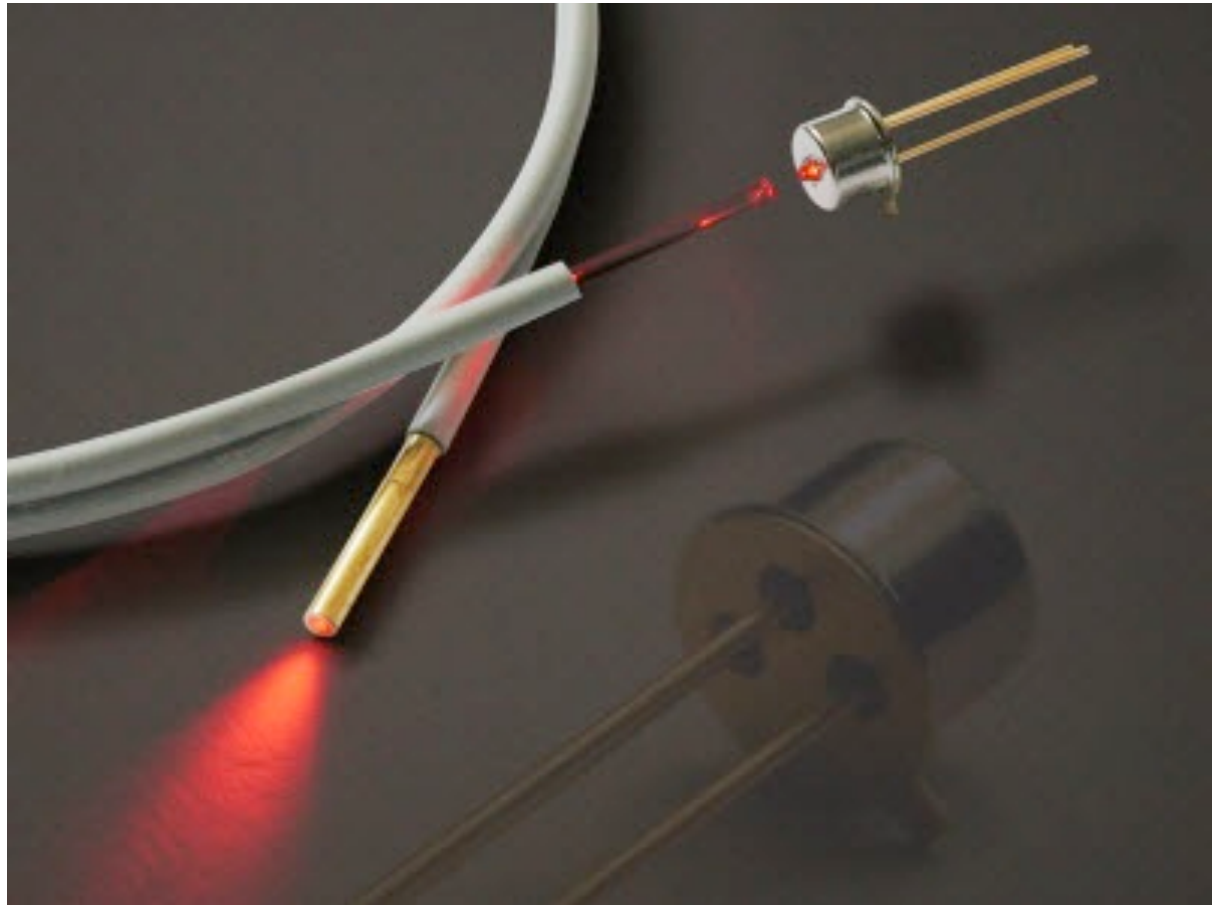


PHY385-H1F Introductory Optics

Class 11 – Outline: Sections 5.5, 5.6

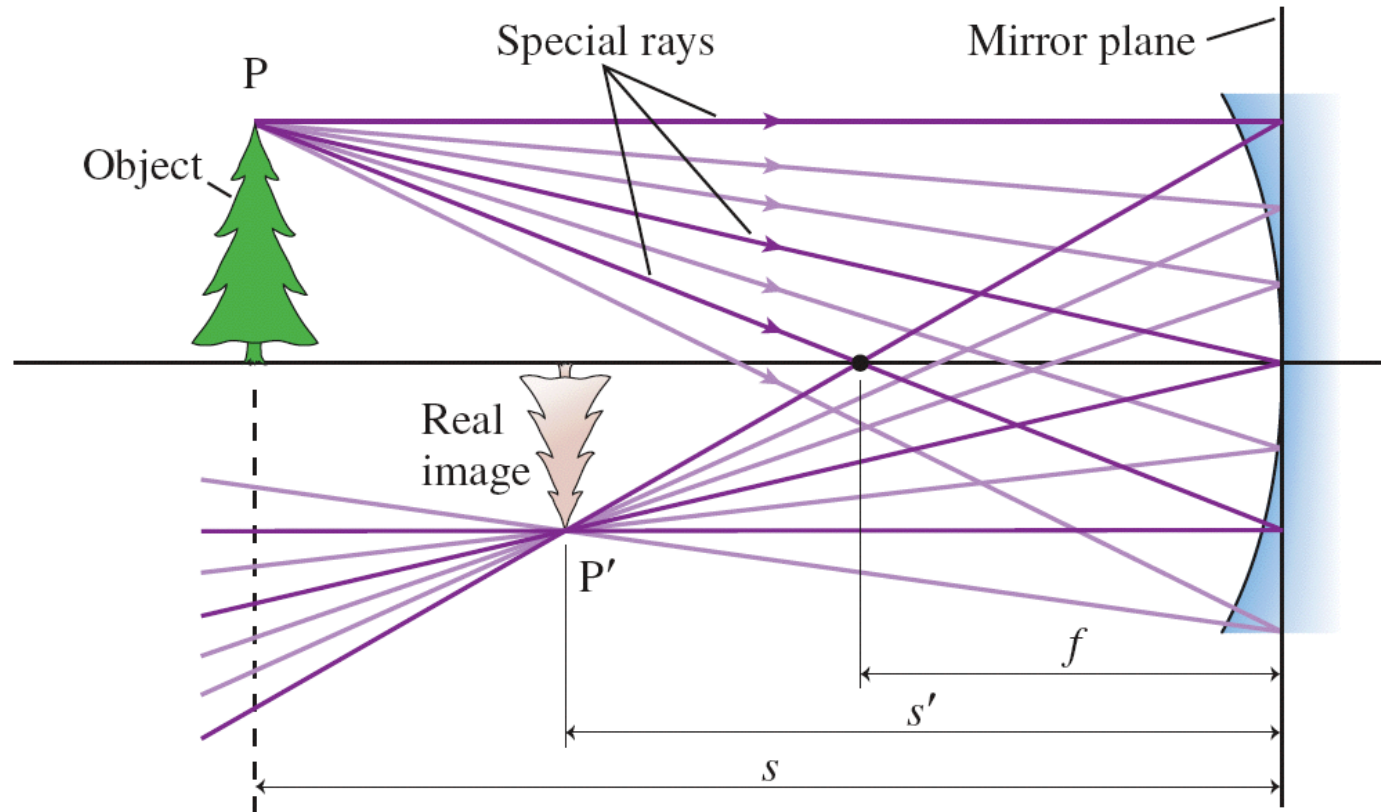
- Convex and Concave Spherical Mirrors
- Prisms – minimum deviation
- Reflecting prisms
- Fibre-Optics



The next 3 weeks . . .

- Next Week: we finish Chapter 5 on Geometrical Optics
- The following week (Nov. 1 and 3) we discuss Standing waves of light and Lasers (Sections 7.1 and 13.1)
- Then there is a fall break and then **Test 2** is on Thursday Nov.10 on Chapter 5 and sections 7.1 and 13.1.

FIGURE 23.52 A real image formed by a concave mirror.



The Mirror Equation

For a spherical mirror with negligible thickness, the object and image distances are related by

$$\frac{1}{s_o} + \frac{1}{s_i} = \frac{1}{f} \quad (\text{thin-mirror equation})$$

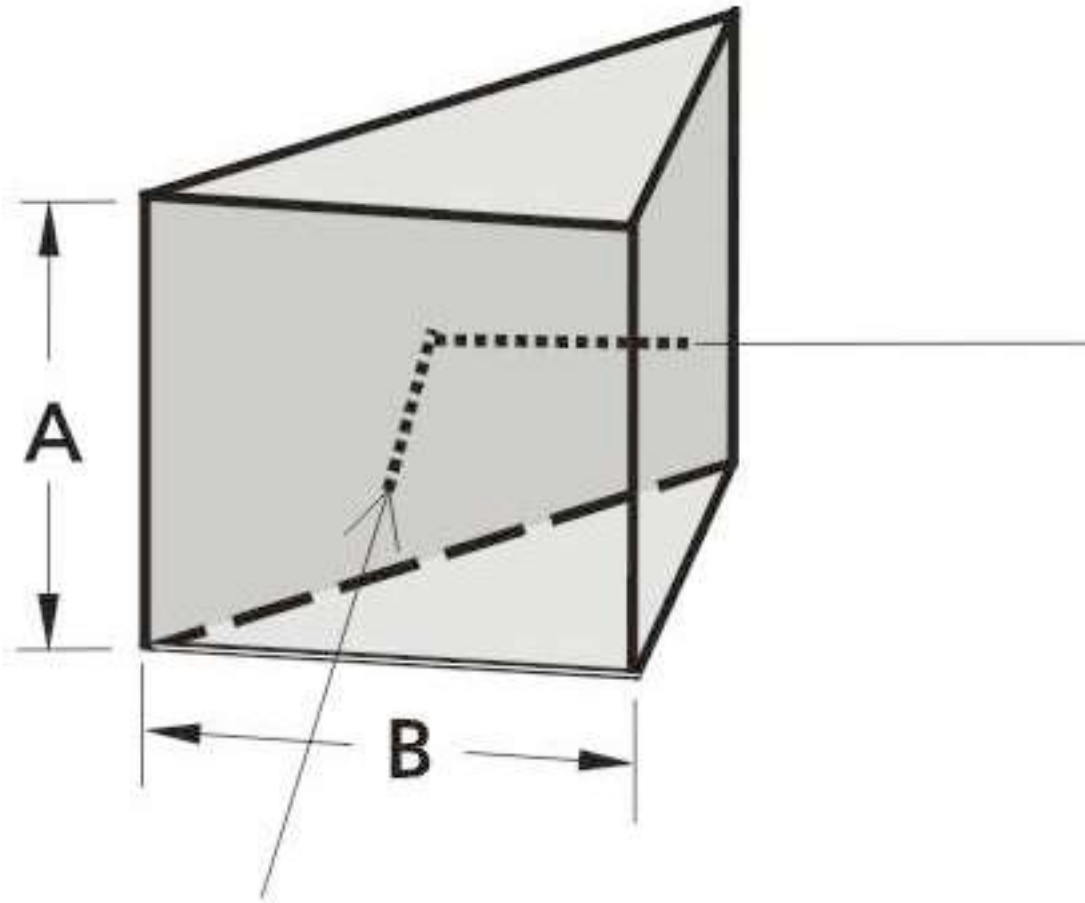
where the focal length f is related to the mirror's radius of curvature by

$$f = \frac{R}{2}$$

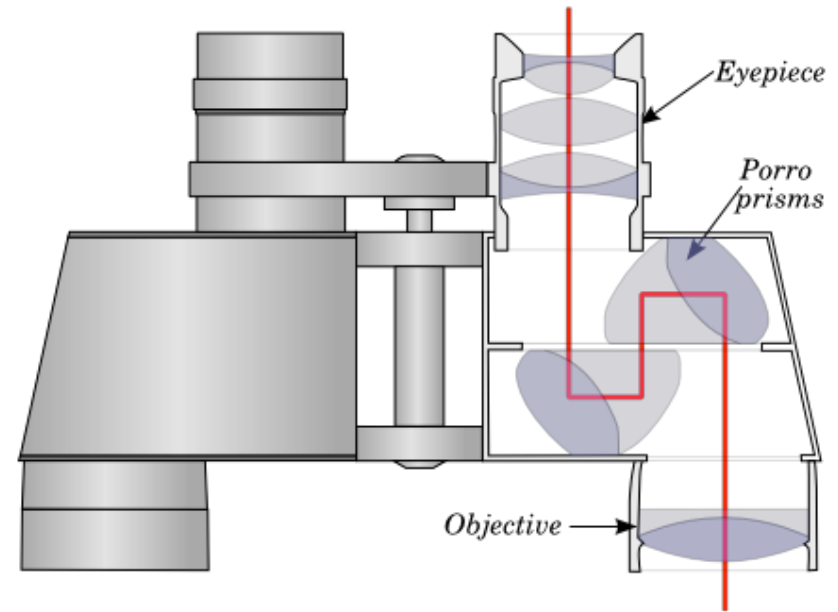
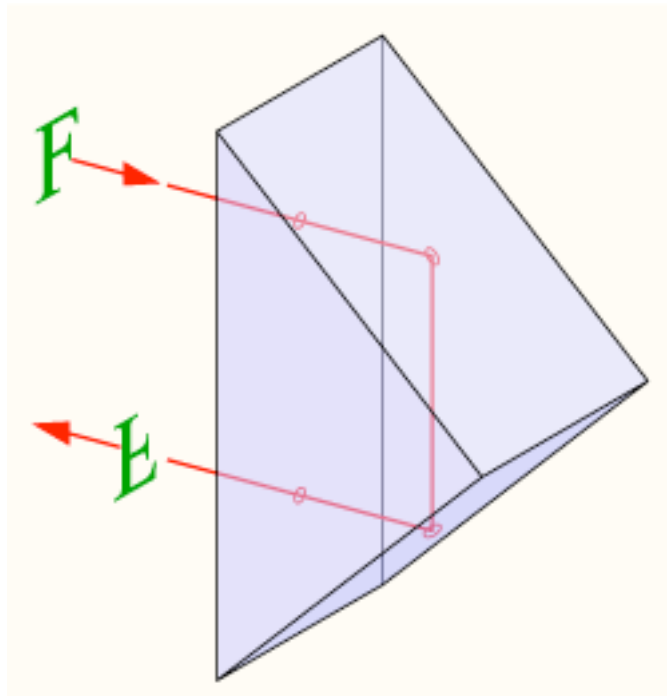
Sign convention for spherical mirrors

	Positive	Negative
R and f	Concave toward the object	Convex toward the object
s_i	Real image, same side as object	Virtual image, opposite side from object

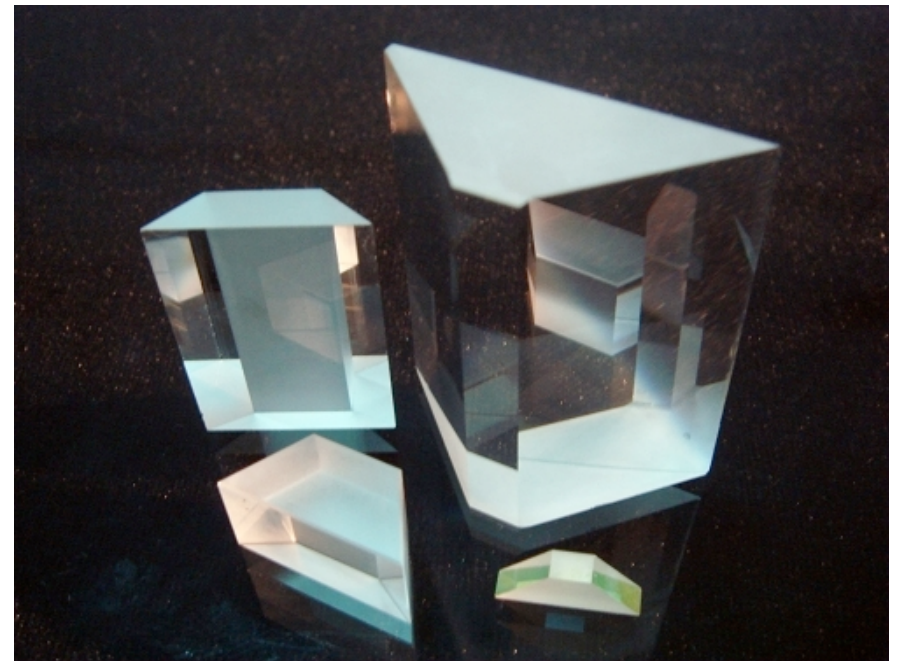
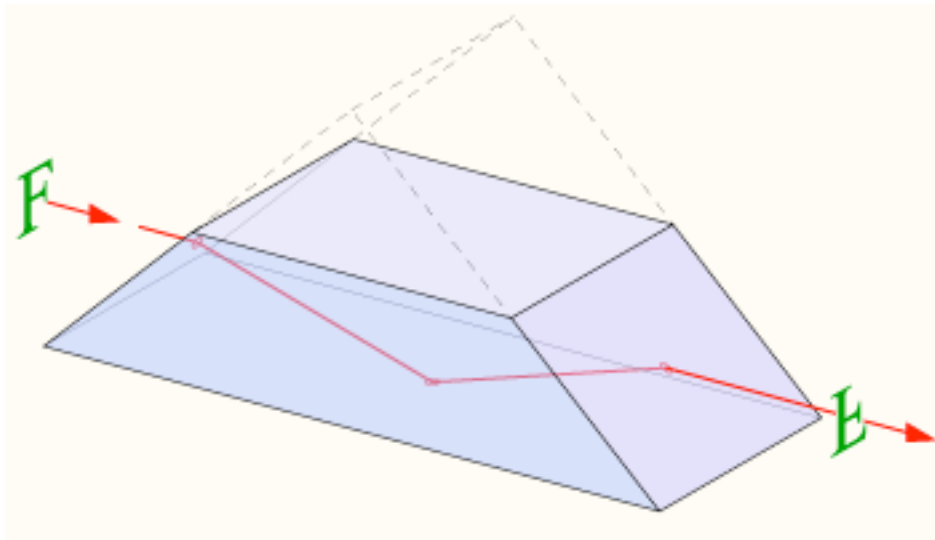
Reflecting Right-Angle Prism



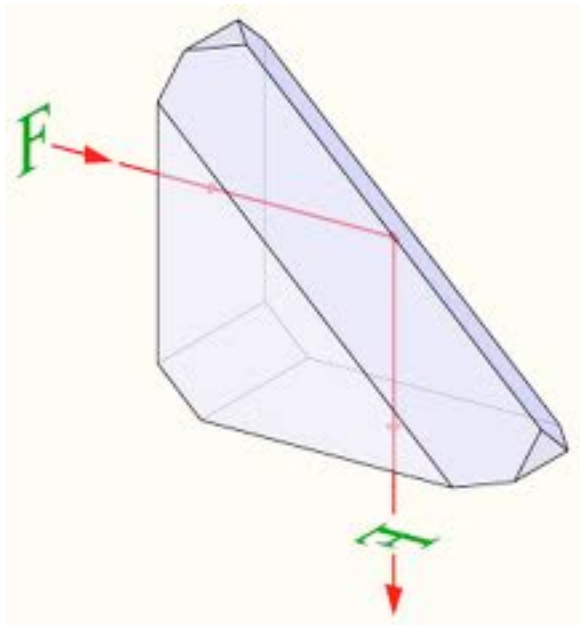
Reflecting Porro-Prism



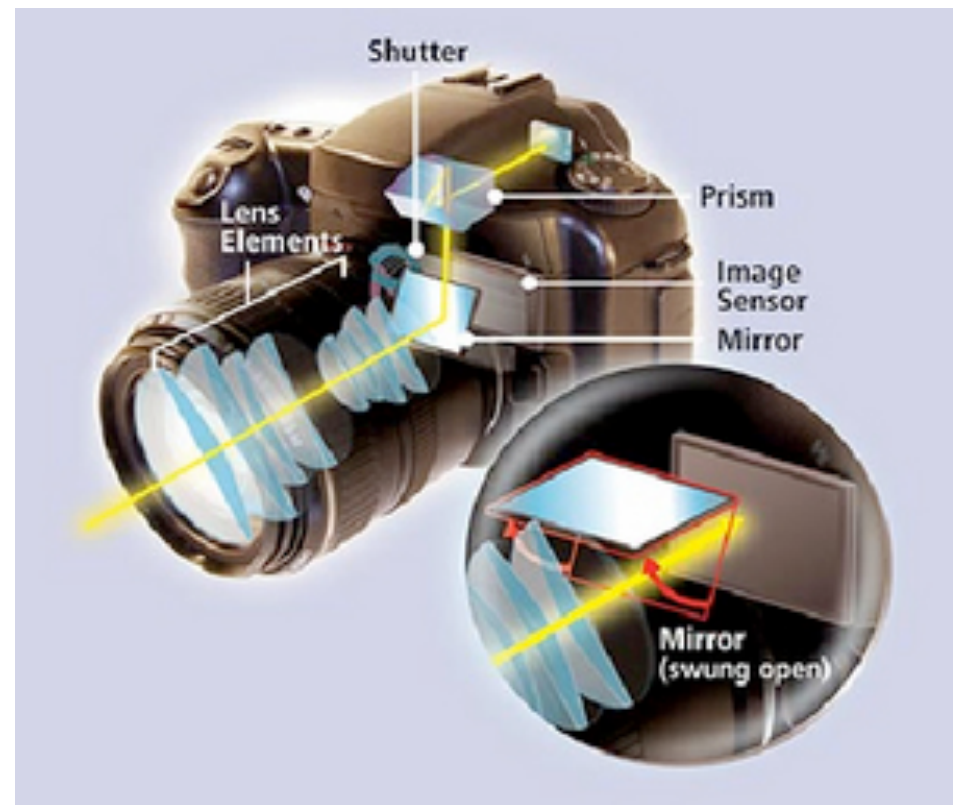
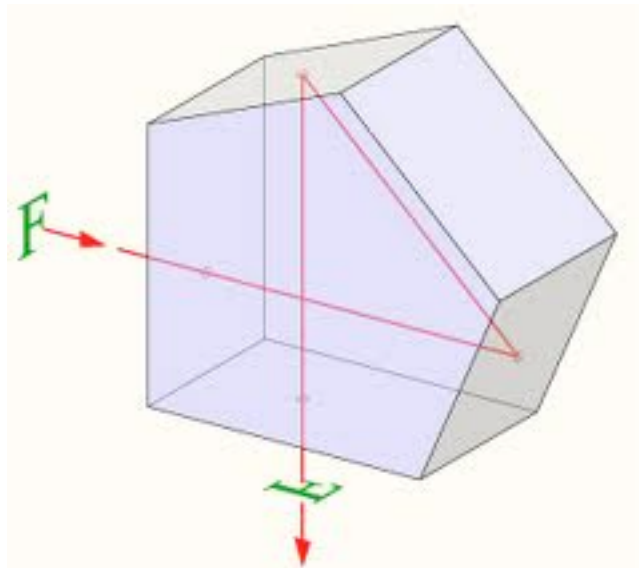
Reflecting Dove-Prism



Reflecting Amici Roof-Prism



Reflecting Penta-Prism



Modal Dispersion In Optical Fibres

