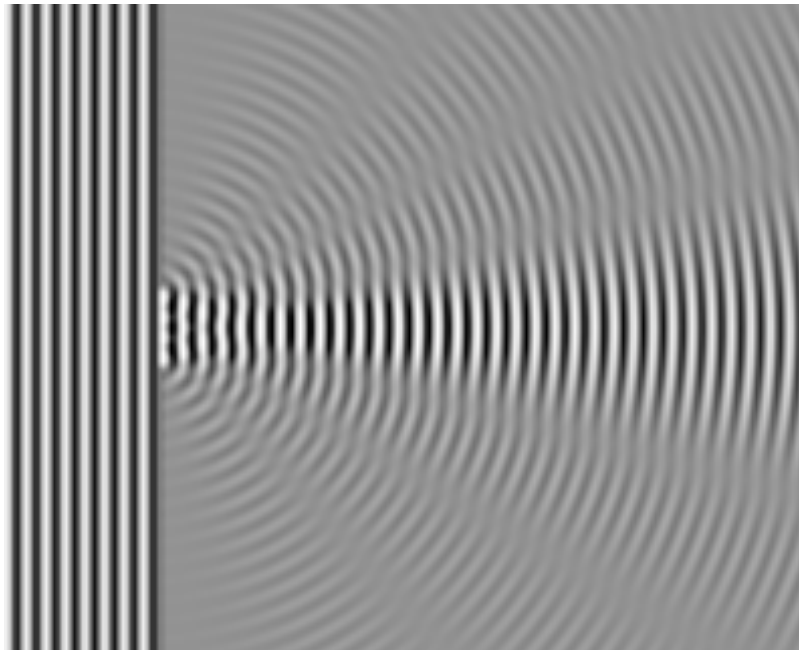


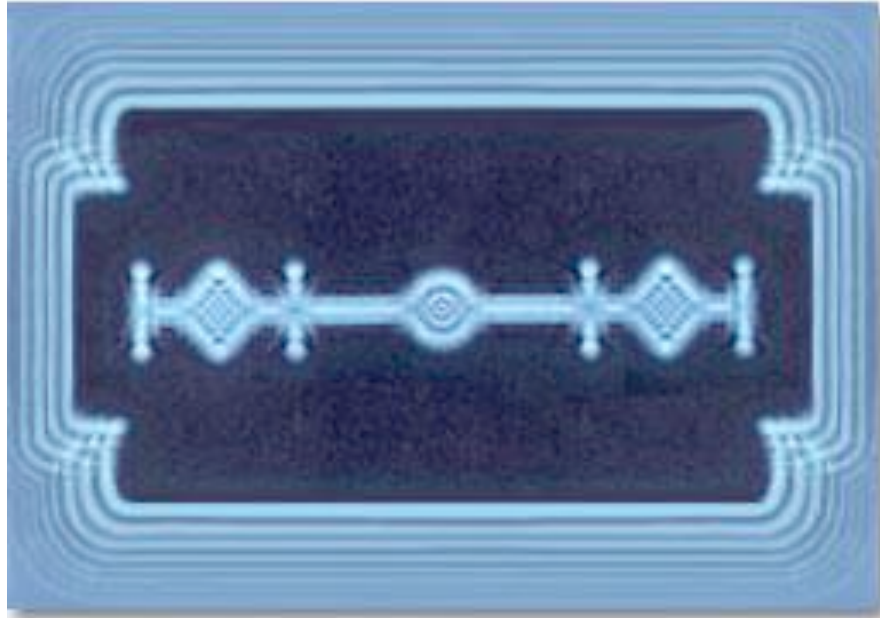
PHY385-H1F Introductory Optics

Class 20 – Outline: 10.1

- Diffraction
- Single-slit: Fraunhofer approximation
- Fraunhofer vs. Fresnel Diffraction



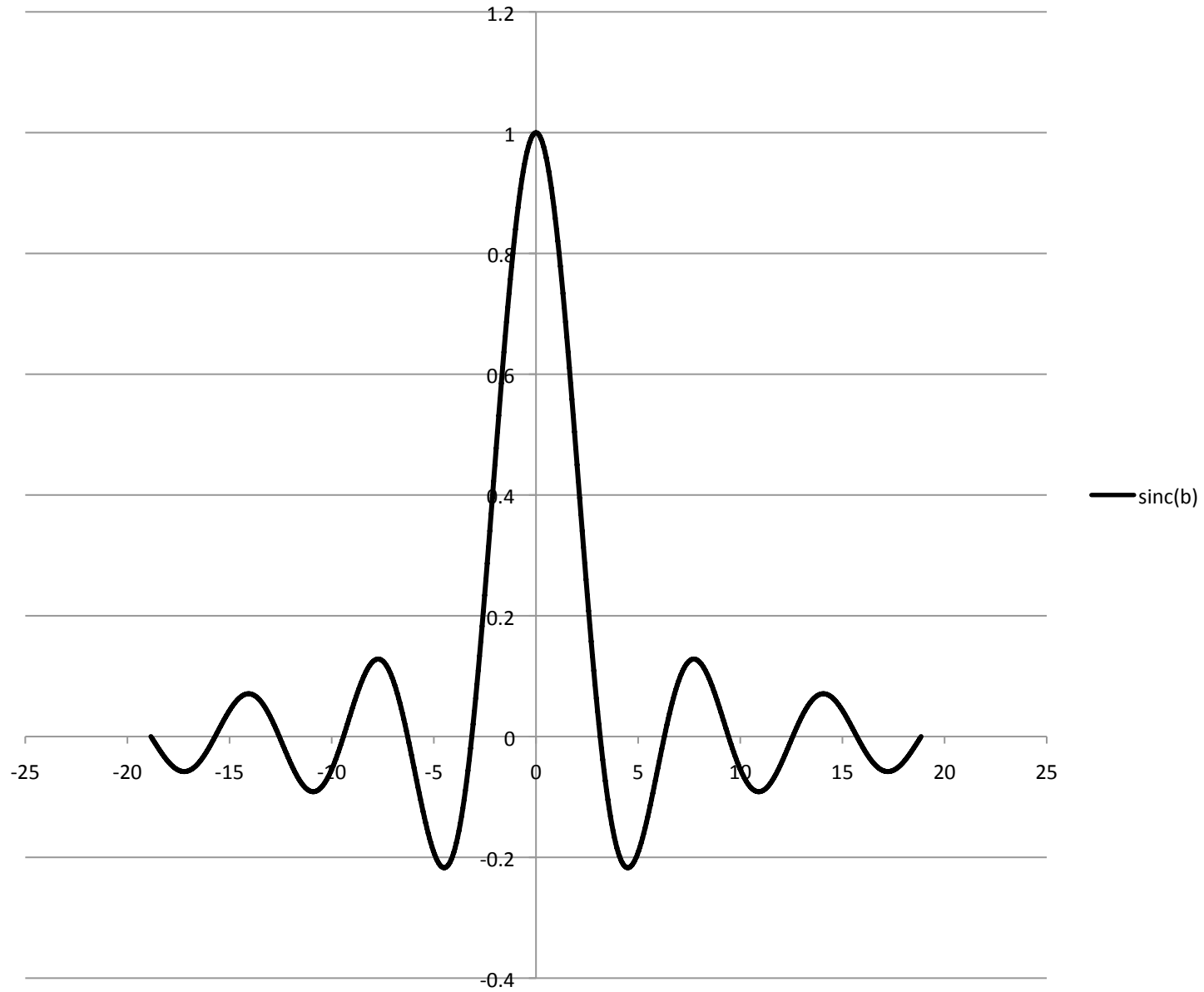
Diffraction



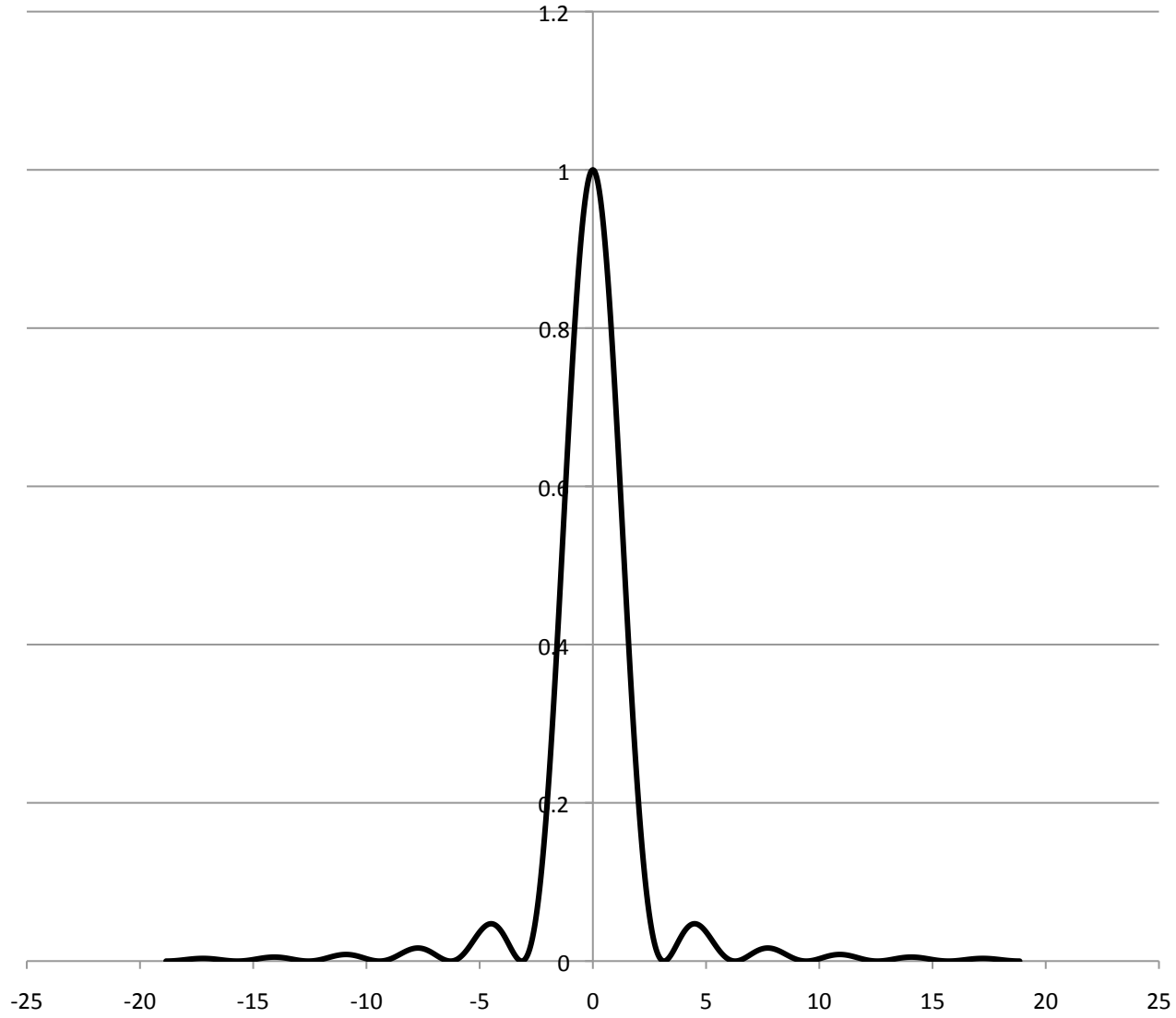
Francesco Grimaldi

- Sometimes light does not travel in straight lines, or rays. The rays bend around edges, because light is actually a wave.
- This was first noted and discussed by Grimaldi in 1640.
- (Grimaldi also discovered the freefall equation $d = \frac{1}{2} a t^2$.)

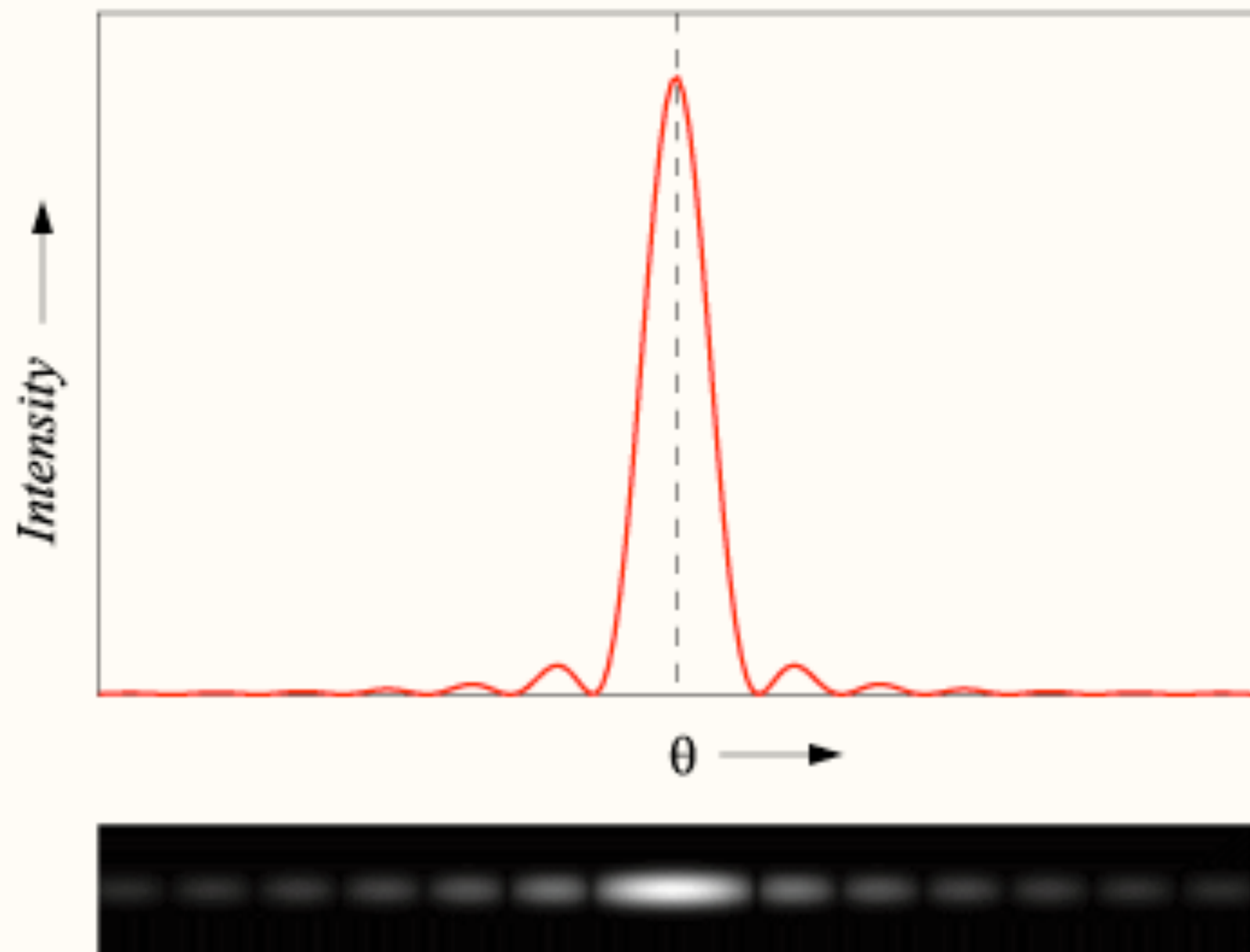
sinc(b)



sinc²(b)



Single-slit diffraction pattern



Fresnel Diffraction Geometry

