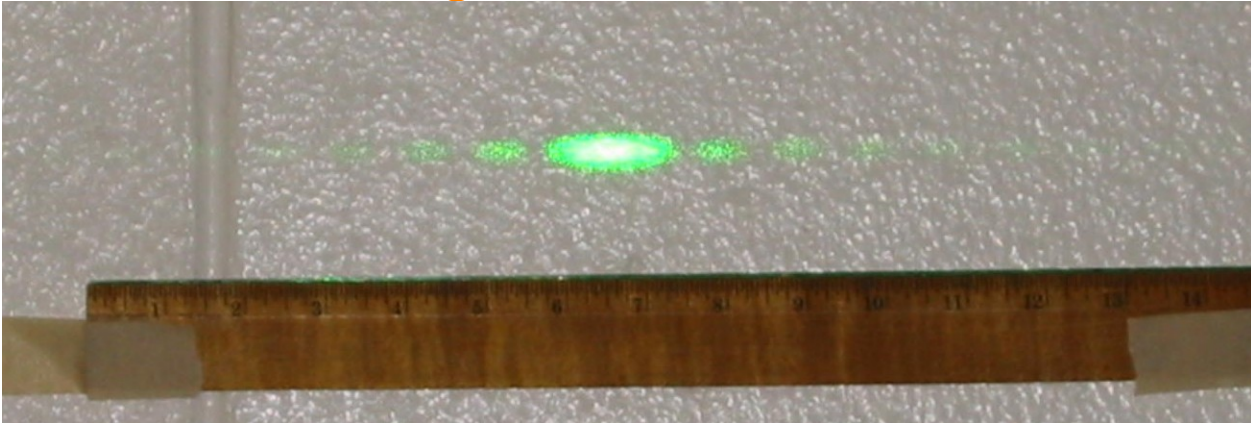
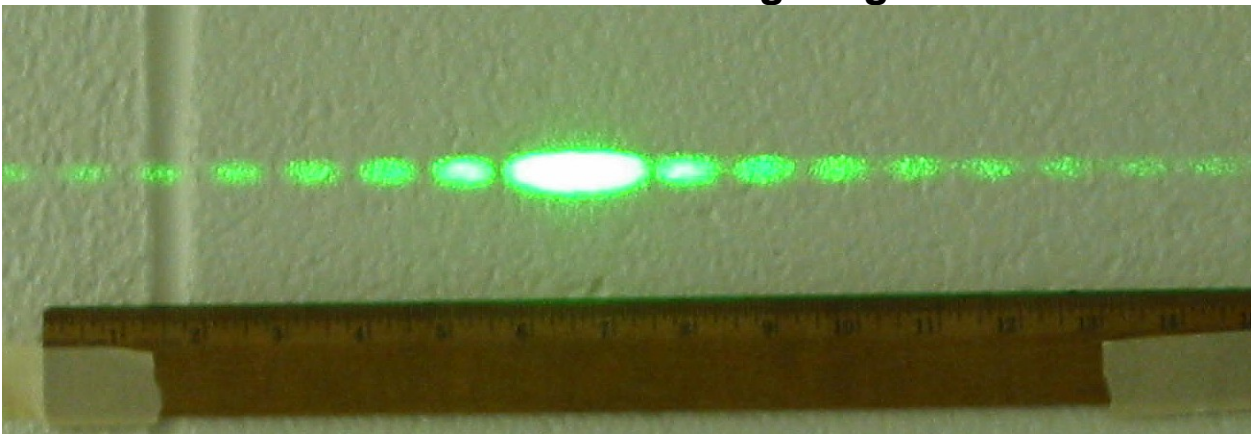


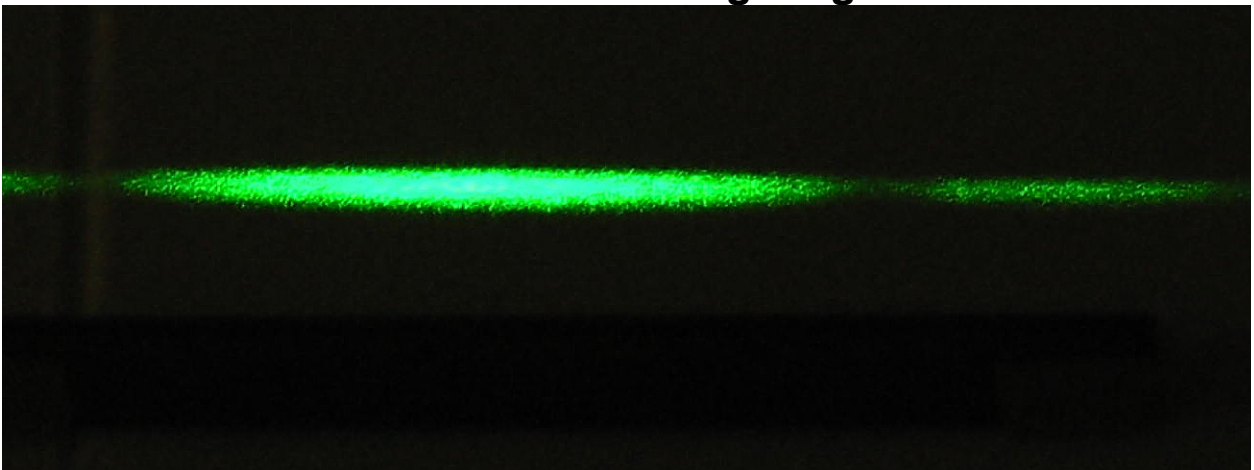
Single-Slit Diffraction



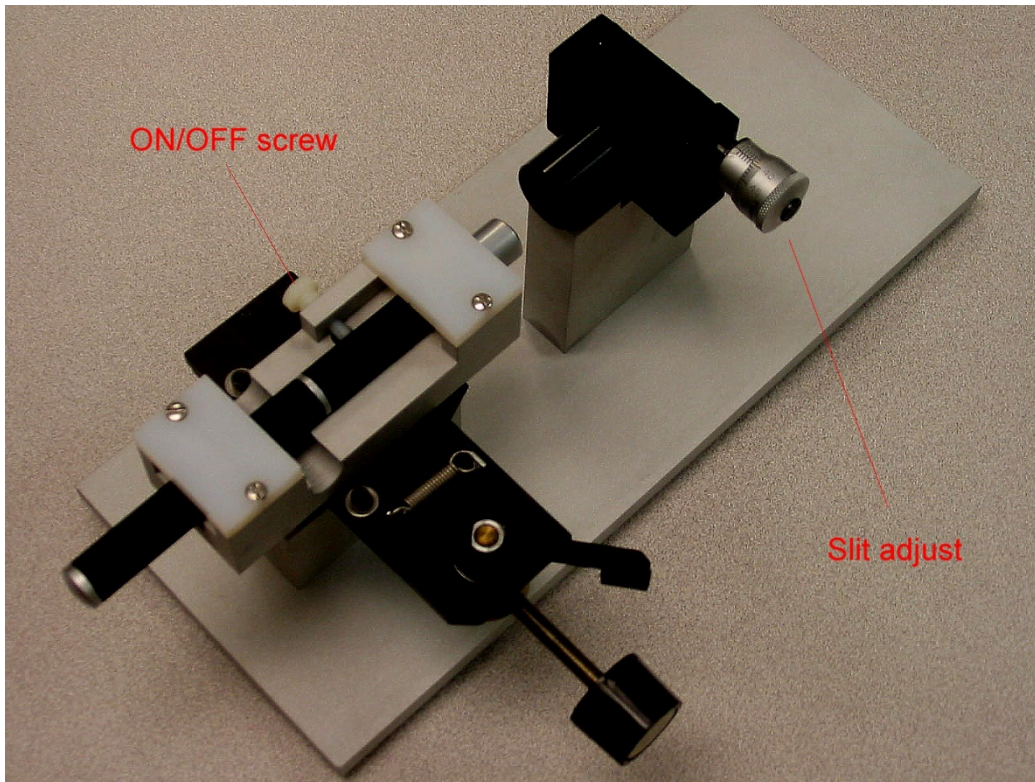
Slit Wide – Normal Lighting



Slit Wide – Half Lighting



Slit Narrow – Lights Out



Apparatus

Purpose: Demonstrates the diffraction pattern produced by a single slit, with the slit width continuously variable.

Diffraction from a single slit is difficult to see because of the low transmission. Here is a demo that overcomes a number of complaints of the previous diffraction demo. To boost visible intensity (for narrow widths) I have used a 10 mW green laser pointer. The whole thing is rigidly mounted with an adjusting screw to help align the laser beam with the slit.

The laser is turned on and off using the nylon thumb screw. The slit width is adjusted using the micrometer screw – all the way in opens the slit wide, and all the way out closes it.

Note: The photos show some typical patterns taken in various lighting conditions (room 304). The ruler is 16 in, and all photos are on the same scale. The laser was about 28 ft from the wall.

WARNING: This is a pretty bright laser so be cautious as to where you shine it.

Extra Equipment: None

Location: Shelf C4