Place the sodium vapor lamp (see Note 1) and the combination lens and grating platform at the front center of the lecture table, pointing toward the screen at the front of the room, and adjust the height of the lamp to that of the lens. Place in front of the lamp a slit of variable width. Darken the room completely. Starting with the slit approximately 4" from the lens, adjust the position of the lens or the slit until the image of the slit is focused on the screen. Now place in the beam, on the circular platform, a grating of approximately 3000 lines/cm. Several orders of reinforcement of the characteristic yellow line of sodium vapor are clearly visible on the screen.

Now substitute the mercury vapor lamp (see Note 2) for the sodium vapor lamp, using the same variable width slit. Several characteristic lines of the mercury vapor spectrum are clearly visible.

Note 1: After being turned on, the sodium vapor lamp requires approximately an hour to attain maximum intensity. It should therefore be turned on some 30 minutes before using.

Note 2: After being turned on, the mercury vapor lamp requires approximately 10 minutes to attain maximum intensity. It should therefore be turned on some 5 minutes before using. Once turned off, it should not be turned on again until allowed to cool.

Note 3: This demonstration can be accomplished by using a prism instead of a grating, but the grating is probably the more satisfactory. A prism is furnished so that, if you wish, you may use it instead of (or even in addition to) the grating.