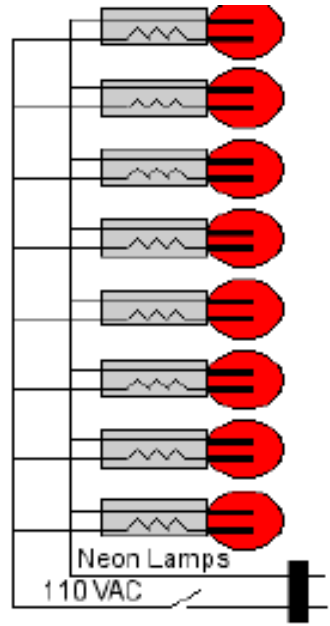
Building a Neon Calibrator Ring

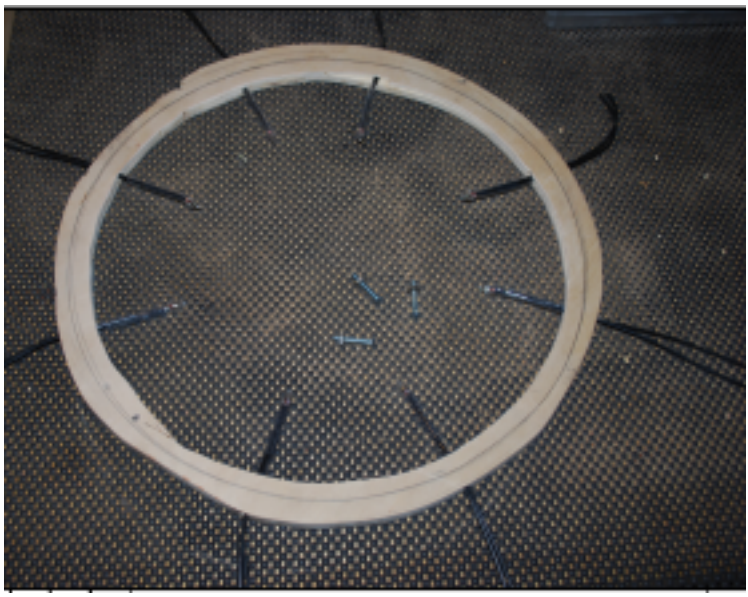
Neon lamps with a built-in resistor that allows them to operate directly off of 110 VAC can be purchased from All Electronics (http://www.allelectronics.com/) 3 for $1.00.



Neon Lamp Wiring

Neon Lamps

A plywood ring can be cut that fits the end of the telescope. Three 8-32 1.5” screws around the edge with heat shrink tubing over them can provide a tight fit to the telescope end.

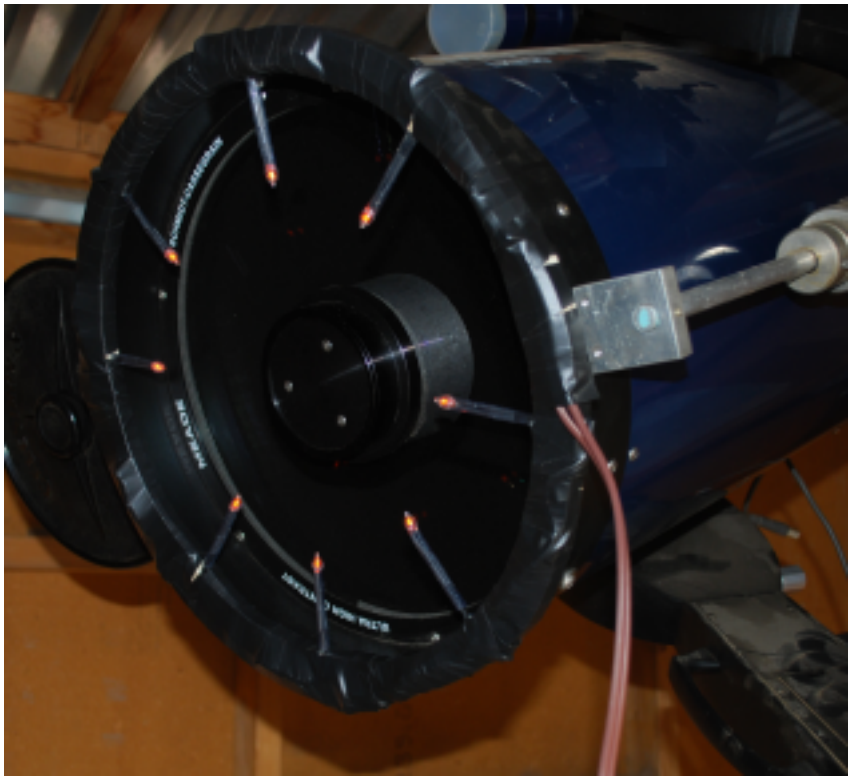


Bare Wooden Neon Ring

The neon lamps can be spaced around the plywood ring by drilling radial holes in the ring and inserting the lamps. The lamps should be connected in parallel to the AC power cord. A remote switch can turn power on and off without touching the telescope.

Power on Neon Ring

The neon lamps can be turned on before the program image is taken or after or even turned during the program image exposure to superimpose the neon spectrum on the star spectrum. Experimentation should be done to determine the optimum exposure times. Different wavelength regions will require different exposures. The exposure is not critical, but a good signal to noise ratio is important. Remember to re-focus the neon lines when changing spectral regions. A large change in wavelength can affect the focus.



Neon Ring on 12" LX200 Telescope

Spectrum Position versus Star Position in Slit

When a star's image is on the slit it drops in. If the star's image is bigger than the slit there will be a section missing from the middle of the image. One thing that may not be obvious at first is that moving the star image back and forth on the slit causes the spectrum image to move up and down on the computer. This was mentioned earlier but worth mentioning again. With