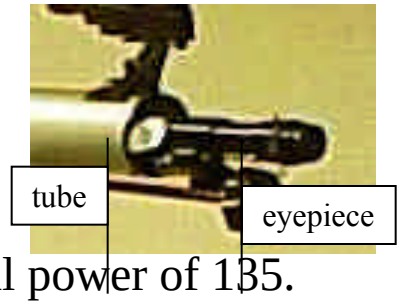
Exploring the Universe

Selecting an Eyepiece

1. You should always start viewing with the lowest power eyepiece, which in this case is the 20-mm lens. Note: the base power of each eyepiece is determined by the focal length of the telescope objective lens. A formula can be used to determine the power of each eyepiece: telescope objective lens focal length divided by eyepiece focal length = magnification. (e.g. Using the 20 mm lens, a sample calculation would look like this: 900 mm / 20 mm = 45 power. Telescope models will vary in focal length.)

2. Included with this telescope is a Barlow lens. The Barlow lens is used to triple or double the power of your telescope. You will want to get comfortable with the other lens before using the Barlow lens. You will place the Barlow lens between the focusing tube and the eyepiece.

   Using the example above, your 3X Barlow lens would



   give you a total power of 135.
   (45 X 3 = 135 power)

Focusing the Telescope

1. Before you focus the telescope be sure to take the dust caps off the front of the main tube. There are two caps: a small cap, which fits inside the large cap that covers the entire front of the main tube. The large cap is also called the moon filter.

2. After selecting the desired eyepiece, aim the main telescope tube at a land-based object that is at least 300 to 400 yards away. A telephone pole, stop sign or a building would be a good choice. **Don't be surprised the object will appear upside down.**

3. Fully extend the focusing tube by turning the Rack and Pinion Focusing Mechanism.

4. While looking through the eyepiece (in this case the 20 mm), slowly retract the focusing tube by turning the Rack and Pinion Focusing Mechanism until the object comes into focus.

Aligning the Finderscope

This process <u>must</u> be done before you start viewing the night sky.

1. Look through the Main Telescope Tube and establish a well-defined target. In a reflector telescope the image will appear upside down.

2. Looking through the Finderscope, alternate tightening each Finderscope Adjustment screw until the crosshairs of the finderscope are precisely centered on the same object that is already centered in the main telescope tube.

3. If your Finderscope is aligned correctly with the Main Telescope Tube the objects in the night sky located first with the Finderscope will also be centered in the Main Telescope Tube's view.

Never look directly at the sun with your telescope. Permanent damage to your eyes may occur.