

## SOLAR VIEWER INSTRUCTIONS

*Note: When building your solar viewers, make sure to help your students when using sharp tools like scissors and utility knives, and regularly monitor their progress.*

1. Using the utility knife, carefully cut a 3-5 cm diameter opening (any shape is fine) in one end of the cardboard tube; this will be the front of your viewer. Tape a piece of aluminum foil securely over the opening. Using the pencil, poke a very small (1cm diameter) hole through the foil (you can always enlarge it later).
2. Using the utility knife, cut a 12 x 8 cm opening toward the rear of one side of the cardboard tube; this opening will allow you to view the Sun's image inside the tube.
3. Using scissors, carefully cut a triangular section of the white card stock paper to fit inside the rear end of the tube (if your tube has hinges, it may be easier to open the flap to complete this step). Sparingly smear some white glue onto one side of the paper and press that side against the inside rear of the tube; this is where the solar image will be viewed. Reseal the hinges and securely tape the tube closed.
4. Check for any "light leaks" in the viewer, and use black tape (electrical tape is good) to seal any areas that allow light in to the inside of the viewer.
5. While not required for viewing, you may want to carefully paint or use decals and "bling" to decorate the outside of your solar viewer to personalize it!

6. Once your viewer is completed, you are now ready to safely observe the Sun, assuming it is a sunny day. To do this, point the front (foil end) of your viewer directly toward the Sun while looking through the side opening at the solar viewing area. When the viewer is precisely aligned with the Sun, a small bright image of the solar disc will appear inside the viewer.
  
7. Again, you can use your viewer on any sunny day, not just when there is an eclipse. But when a partial eclipse is in progress, you will see the Sun appear to have a “bite” taken from it. You may not notice anything until the eclipse progresses a bit, but then watch how the solar disc seems to be turning into a smaller and smaller crescent. If there are large sunspots on the Sun, you may notice them in your viewer as well.