



*A fun gibbous and full moon
observing activity!*

Observing the gibbous & full moon without optical aid



The gibbous and full moons can be quite bright, producing an abundance of refracted glare when viewed by the unaided eye. Little, if any lunar detail can be seen – just a frustrating blur.

To nearly eliminate the glare while increasing your ability to discern surface detail, try the following:

1. Drill a 1/16 inch (or 1.5 mm) hole in a thin opaque card. A plastic soft drink bottle cap works nicely. (A smaller hole dims the moon too much.)
2. Remove any burrs.
3. Hold the card/bottle cap to your eye so that it is within 1/2 inch of the pupil, and look at the bright moon.
4. The dark markings (maria) on the lunar surface should be discernible.

This works because of two reasons.

1. Only about 6% of the moonlight is allowed to enter the pupil, nearly eliminating glare.
2. Light traveling through the outer portions of the eye, where most common eye distortions occur, is blocked by the opaque card. The light that passes through the central part of the pupil has little distortion, resulting in greatly improved visual acuity.

The larger lunar maria might be seen including Maria Crisium, Tranquilitatis, and Serenitatis – even for observers with less than 20/20 vision. The distance gap between Mare Crisium and the limb can be estimated, and over time, the observer can notice the effect of changing eastern lunar libration.

