

# A Special Medical News Report

## The Solar Eclipse



**Saturday, August 19, 2017**

**[www.themedicalnewsreport.com](http://www.themedicalnewsreport.com)**

**The Journal of the American Medical Association (JAMA), August 18, 2017 internet site just published a nice article on the solar eclipse and a call for using safety measures to not injure the eye. I think some of the items are well worth sharing.**

**Where I currently reside (Sky Valley, Georgia), I will be blessed to see a totality of the solar eclipse. There are over 50,000 visitors expected in our county (Rabun County), the only tiny corner of Georgia to view a total eclipse, however, there is a wide percentage of the U.S. that will witness a partial eclipse. This is the first solar eclipse that will be seen in North America coast to coast in 99 years, and there will be no further solar eclipses in the U.S. the rest of this century.**

**Millions of Americans will be subject to potential permanent eye damage if they don't protect their eyes and look directly at the eclipse.**

**On Monday, August 21, 2017, for 2 minutes and 41.6 seconds we will watch the moon completely cover the sun. Although the moon is 400 times smaller than the sun, because of its closer position to the earth, it will cover the sun in a narrow zone across the U.S. Approximately 12 million people live in the totality zone.**

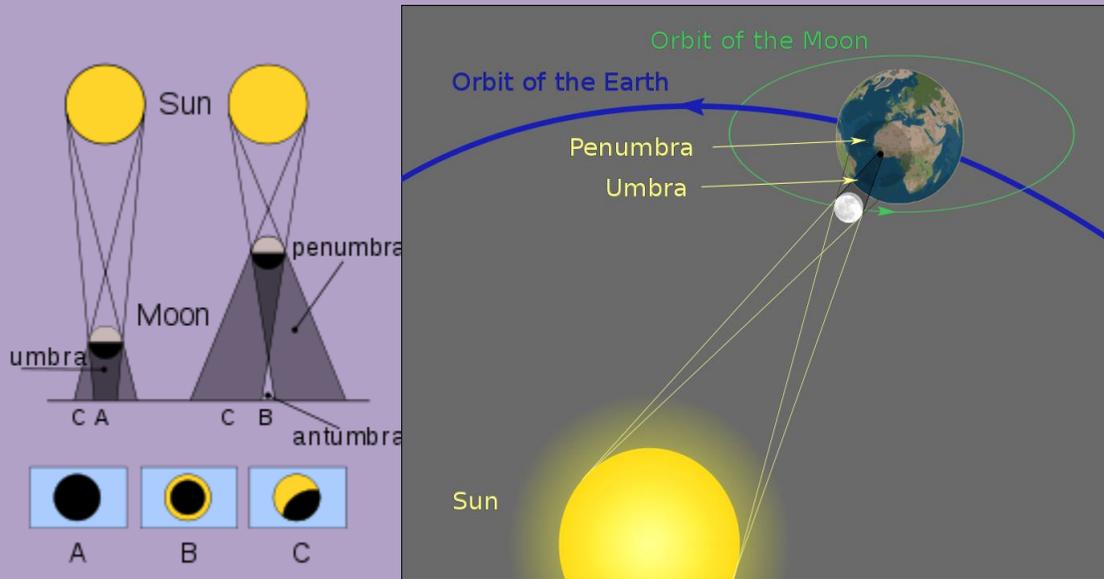


**Solar eclipses occur almost every year somewhere in the world, but since 70% of the earth is covered by water, many of them are missed since they are not visible on land.**

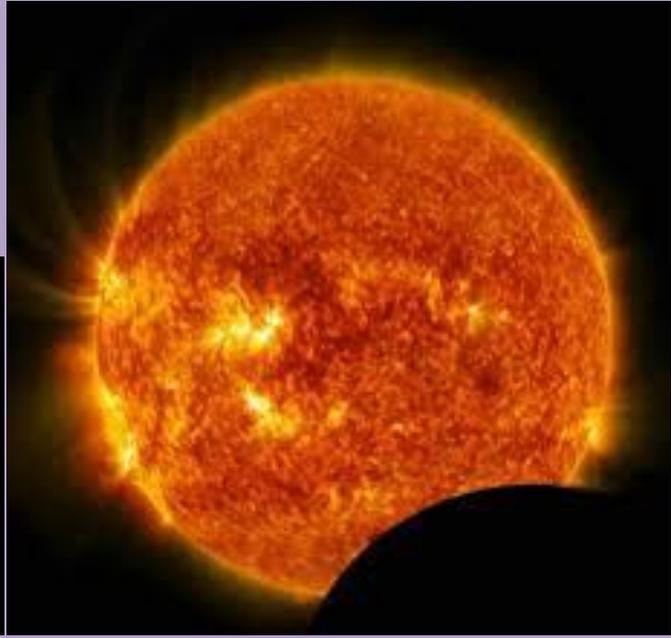
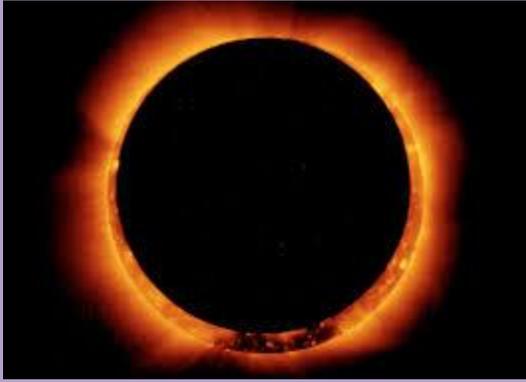
**Lunar eclipses occur when the moon enters the earth's shadow and are much more common.**

Eclipse season occurs only 2 times a year, when the plane of the earth's orbit around the Sun crosses the plane of the Moon's orbit around the Earth. And when is in perfect position, a total eclipse will occur.

The area to view a total eclipse is called an **umbra**. A partial eclipse will be viewed in an area called a **penumbra**.

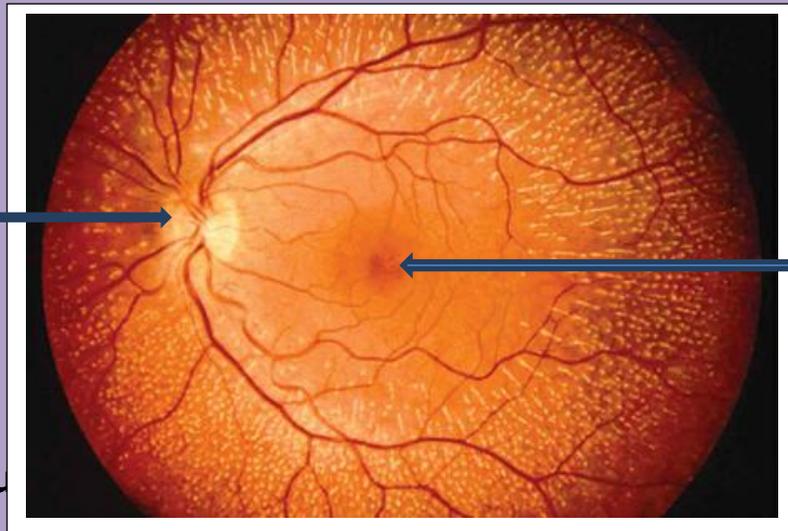


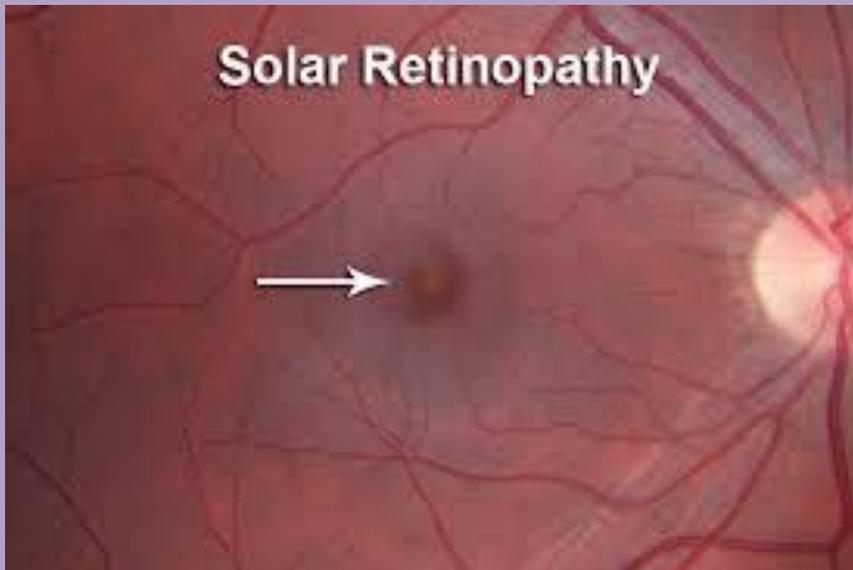
This is a NASA photo of the sun as the moon begins to cover the sun (next page).



There is real danger to the eye when viewing the sun for any period of time even a few seconds. Because the retina has a central point called the **macula**, we use this spot to look directly at objects. It is the point of sharpest vision and will be greatest damage from the sun. It is also the area that is affected by macular degeneration, a major cause of blindness in the elderly.

optic  
nerve  
macula  
macularbu





**If a solar burn occurs at the macula (above), symptoms of visual loss will usually occur 1-4 hours after exposure, which will gradually improve within 6 months. However, there is no guarantee of full recovery.**

**This is a photo (below) showing the result of macular degeneration losing the central vision including the macula. This could occur to some extent with solar retinopathy from looking at the sun.**



**People must use eye protection. Below are NASA approved eye wear. Thousands of these have been sold**

**just here in Rabun County. Over 55,000 cars are expected to be present in Rabun County alone Monday attempting to see a total solar eclipse.**



**Animals could be harmed in two ways—from viewing the sun (they are smarter than humans and won't) and because of the confusion of "nightfall" occurring during the day, it could create anxiety in some. It was recommended at one site to keep animals inside in the light.**

**Children must be monitored carefully to be sure their glasses are in good position. If they do not have glasses, keep them inside.**

**There is great concern for car accidents, road rage, and bad behavior (drugs, alcohol) that will come from massive crowds and partying excessively. Also, those who develop a medical emergency will also be in potential peril getting EMS to respond.**

**If a person experiences visual difficulty after looking at the sun during an eclipse, they should see an ophthalmologist. There is no treatment, but an examination of the retina is necessary to evaluate what possible damage has occurred. I suspect they will be covered up with appointments.**

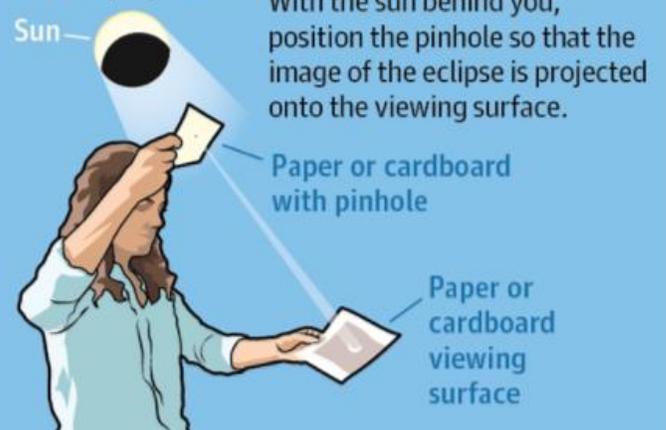
## Safety Tips from JAMA

### Devices for Safely Viewing a Solar Eclipse

**Filters**  
Shade No. 14 welder's glasses    Aluminized Mylar filters



**Indirect viewing**  
Pinhole projector



Sun

With the sun behind you, position the pinhole so that the image of the eclipse is projected onto the viewing surface.

Paper or cardboard with pinhole

Paper or cardboard viewing surface

### Do Not Use

Unfiltered binoculars or telescopes



Sunglasses



Cell phone cameras



**Some may think at the very moment of the total eclipse, it might be safe to look at the sun, but there will be only a very short time when the moon will completely block the sun totally, and in a partial eclipse, the sun will be visible throughout the eclipse. Even though the sun will be less brilliant for a time, it could still damage the retina. Retinal tissue once injured will not repair. It will scar and the sharpest vision may be lost permanently.**

**If you were not fortunate enough to purchase eclipse glasses, take a piece of paper or cardboard and create a**

pinhole to view the eclipse indirectly on a piece of white paper as seen in the above drawing.

For more information, click on:

[www.preventblindness.org/solar-eclipse-and-your-eyes](http://www.preventblindness.org/solar-eclipse-and-your-eyes)

To witness the eclipse from NASA, click on:

[www.nasa.gov/eclipselive](http://www.nasa.gov/eclipselive)

Be safe and be good to each other. Have a great time and enjoy one of the wonders of the world. *Dr. Sam*

