

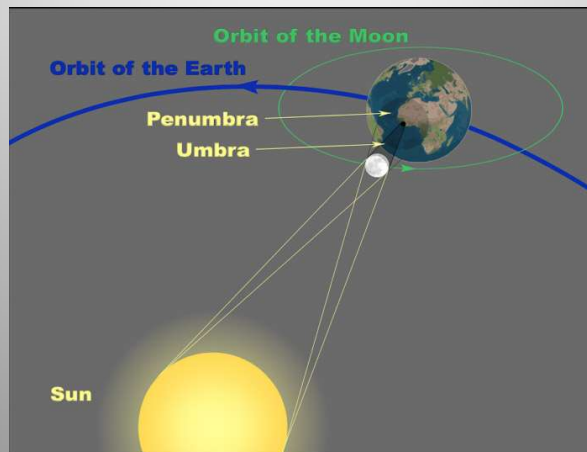
HOW TO TAKE ECLIPSE PHOTOS



By Santos Rubio

What Is a Solar Eclipse?

A solar eclipse occurs when the Sun, the Moon and the Earth (specifically your location on Earth) all line up. The Moon passes between us and the Sun.

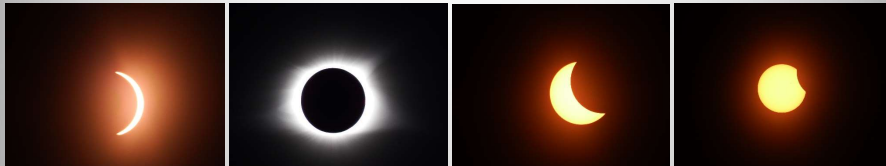


The origin of solar eclipses. Image Credit: Wikipedia.

The five steps of a solar eclipse.

Here's a brief description of what happens during each phase.

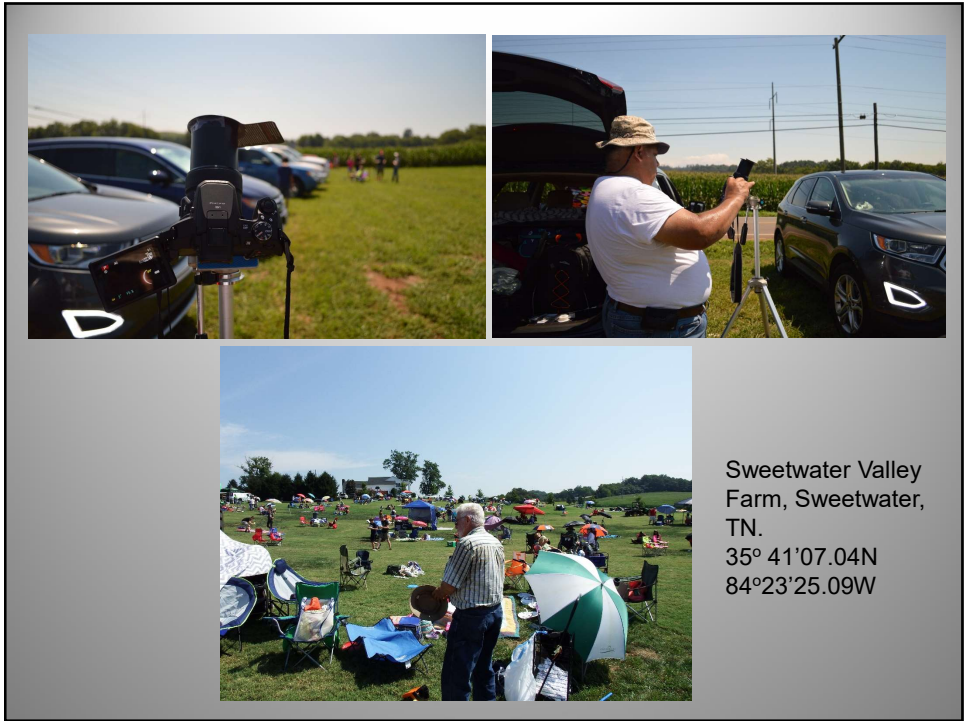
1. **Partial eclipse begins (1st contact):** The moon starts to appear over the sun's disk.
2. **Total eclipse begins (2nd contact):** The entire disk of the sun is covered by the moon. Observers in the path of the moon's umbra may be able to see Baily's beads and the diamond ring effect, just before totality. The chromosphere can be visible.
3. **Totality and maximum eclipse:** The Moon completely covers the disk of the Sun. Only the Sun's corona is visible. This is the most dramatic stage of a total solar eclipse. At this point, the sky goes dark, temperatures can fall, and birds and animals often go quiet. Observers in the path of the Moon's umbra may be able to see Baily's beads and the diamond ring effect, just after totality ends.
4. **Total eclipse ends (3rd contact):** The Moon starts moving away, and the Sun reappears.
5. **Partial eclipse ends (4th contact):** The Moon stops overlapping the Sun's disk. The eclipse is ending at this stage in this location.



Photo's by Santos Rubio

On 21 August 2017, America was treated to its first coast-to-coast total solar eclipse in nearly 100 years. It was also the first total eclipse exclusive to the U.S. since before the nation's founding. It was truly a NATIONAL ECLIPSE.

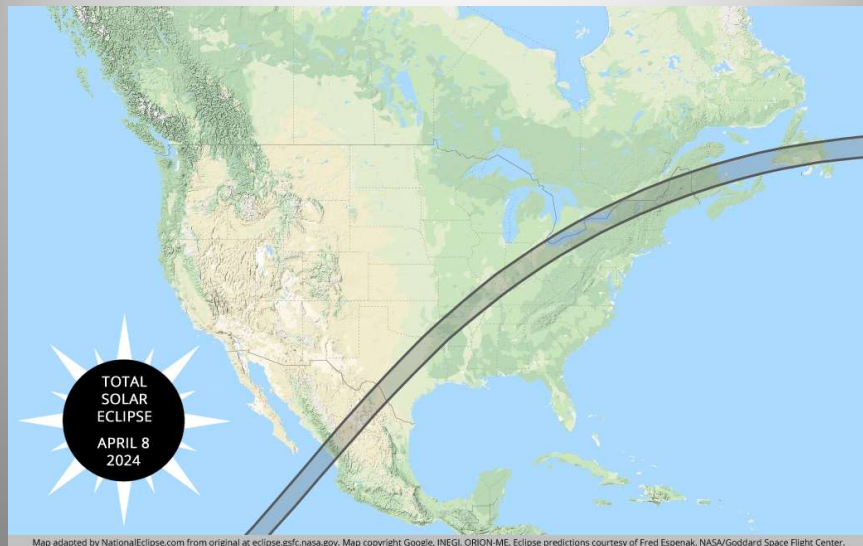
From Oregon to South Carolina, the eclipse traced a 67-mile-wide path of totality across the country and millions of Americans and visitors from around the world witnessed the Moon passing between the Earth and the Sun and day turning to night for almost three minutes.



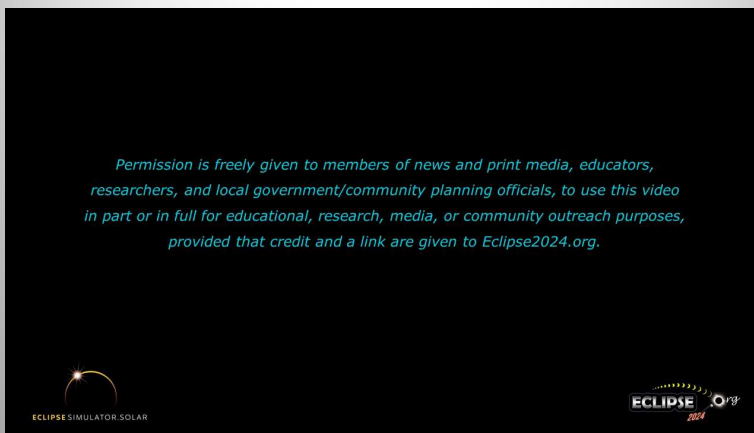
2017 Solar Eclipse composite video Celestron and other viewers.



TOTAL SOLAR ECLIPSE APRIL 8 2024



Permission is freely given to members of news and print media, educators, researchers, and local government/community planning officials, to use this video in part or in full for educational, research, media, or community outreach purposes, provided that credit and a link are given to Eclipse2024.org.



The next total solar eclipse in the U.S. will occur on April 8, 2024, traveling through the country from Texas to Maine. Although the 2024 eclipse won't be a NATIONAL ECLIPSE, in some ways it promises to be even more spectacular, crossing over or coming close to more major cities and with a maximum duration of totality that's almost two minutes longer than in 2017!

Safety First

“Protect your eyes and your equipment with solar filters”

Solar Eclipse Glasses - make sure to have plenty of eclipse glasses on hand to view and photograph partial and total solar eclipses! Solar Safe, all Solar Eclipse Glasses should be 100% ISO-certified. Get the most out of your solar eclipse experience

Solar Filter - This is by far the most important piece of equipment when it comes to photographing the Sun. This filter is not there to create nice photographic effects. It's there to prevent irreparable damage to your camera (and, more importantly, your eyes when you look down your optical viewfinder).

Celestron EclipSmart 8 Piece Solar Eclipse Observing & Imaging Kit



This Celestron EclipSmart 8-Piece Solar Eclipse Observing and Imaging Kit is a must-have to view and photograph partial and total solar eclipses! Affordable, easy to use, and best of all, Solar Safe, all Celestron EclipSmart Solar Eclipse Glasses are 100% ISO-certified. Buy with confidence, knowing that EclipSmart will protect your eyes and camera sensors during times of observation and imaging. Get the most out of your solar eclipse experience with this Celestron EclipSmart kit! This kit has it all with four pairs of plastic one-size-fits-all solar glasses, a pair of premium solar sun glasses, an informational eclipse book, a double-sided transit map, and a solar-safe photo filter.

WHAT YOU WILL NEED



- Film/Digital SLR Camera
- 18-50mm Lens(*)
- 70-200mm Lens
- 100-600mm Lens
- Tri Pod with 3-way pan head
- Carrying Case
- Note Pad with Pen
- Lots of Film/Memory
- Extra Batteries
- Battery Charger
- Solar Filter

* If you do not have a backup camera.



WHAT YOU WILL NEED-Continued



A Backup Camera with a built-in zoom lens to take the camp pictures if you do not want to change lens on your SLR camera. Don't forget the solar filter, memory and batteries for this camera.



Sitting and waiting a long time is given at these events so a chair will help. Also remember your head gear, Solar Glasses and sunglasses, and always Keep the weather in mind and dress for it.

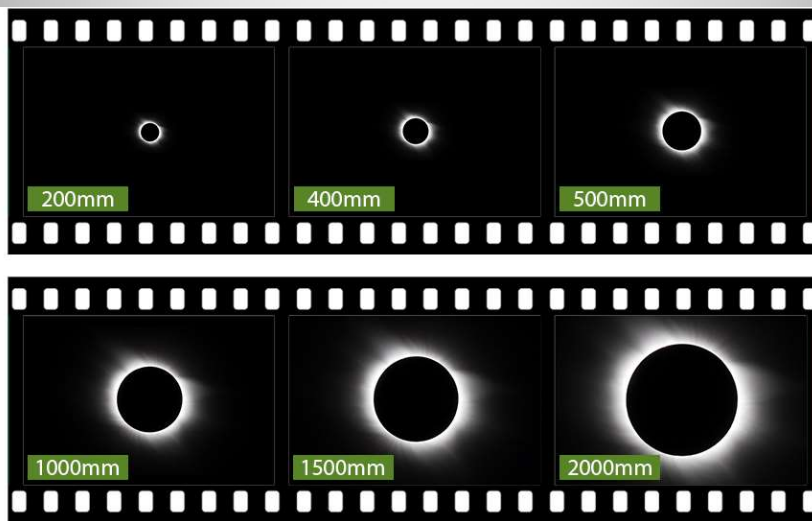


Tripod - A tripod is a must-have. It will allow you to set up your SLR camera before the beginning of the phenomenon. You might have to compete for your photography spot. Particularly if you want to photograph the eclipse and the landscape using a wide angle lens, so plan to be at your location well in advance.



The Sun moves in the sky at about 15°/hr. So if you want to use a long telephoto lens, you will need a tracking device like the Skywatcher Star Adventurer to follow it. That's if you don't want to re-frame very often. If you don't have a tracker, a 3-way pan head may be an easier option than a ball head. That way you can re-center the Sun in the frame easily.

What Lens Should I use?



Camera Settings – This solar eclipse exposure guide is a starting point.

1. First of all, set your camera to shoot in RAW.
2. The lowest possible ISO (typically ISO 100 or ISO 200).
3. If you are on a tripod, remember to disable any image stabilization.
4. As per aperture, I rarely go wider than f/5.6.
5. White balance should be, obviously, set to sunlight.
6. The Sun is bright even with solar filter installed, auto-focus should work well. For consistency though, I prefer to focus manually.
7. The amount of Sun blocked by the Moon varies during the eclipse. This means that you will have to adjust your shutter speed or your solar eclipse exposure.
8. This is assuming you are using a white light solar filter, ISO 200 and f/5.6.
9. Full Sun: 1/1000th of a second or faster;
10. Partial Solar Eclipse: 1/500 – 1/250th of a second;
11. Diamond Ring: 1/250th of a second;

You may tune your exposure settings considering your gear and weather conditions (haze, fog, clouds, etc.).

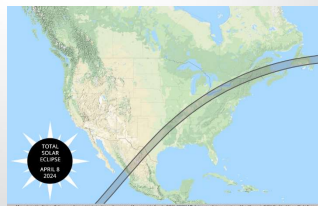
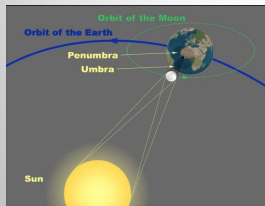
Cheat Card

The cheat card is organized into three horizontal rows, each with a vertical label on the left and right sides. The top row is labeled 'Aperture' and shows a scale from small aperture (F22) to large aperture (F1.4) with circular icons representing the aperture sizes. The middle row is labeled 'Shutter' and shows a scale from fast shutter speed (1/1000) to slow shutter speed (1/4) with icons of a person running. The bottom row is labeled 'ISO' and shows a scale from low sensitivity (ISO 100) to high sensitivity (ISO 25600) with icons of a person holding a camera. The card includes the website 'www.hamburger-fotospots.de' and a Creative Commons Attribution-NoDerivatives 4.0 International License logo.

Aperture	Shutter	ISO
F22	1/1000	ISO 100
F16	1/500	ISO 200
F11	1/250	ISO 400
F8	1/125	ISO 800
F5.6	1/60	ISO 1600
F4	1/30	ISO 3200
F2.8	1/15	ISO 6400
F2	1/8	ISO 12800
F1.4	1/4	ISO 25600

Hamburger Fotospots Cheatcard www.hamburger-fotospots.de
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Check on the Internet for some up coming ECLIPSE events



If this celestial alignment is perfect, and if you are in the right location, the Moon will cover the solar disk in the sky. This plunges you into darkness (no wonder people in ancient times saw a solar eclipse as a bad sign).

A total solar eclipse is possible because the apparent size of the Moon in the sky is pretty much matching that of the Sun.

Here's a fun fact. The moon is getting away from Earth at about 3mm/year, so in the distant future total eclipses will not be possible anymore.

Better take those pictures while you still can.

That One Photo



Here you will have time to compose your shot and adjust your camera for the photo you are about to take.

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Lawton, Oklahoma

Any Questions?