Solar Eclipse Photography for Beginners: What You Need to Know

Interested in capturing one of the most famous natural wonders of the world? Read below to find out how you can also be a part of this wonderful experience!

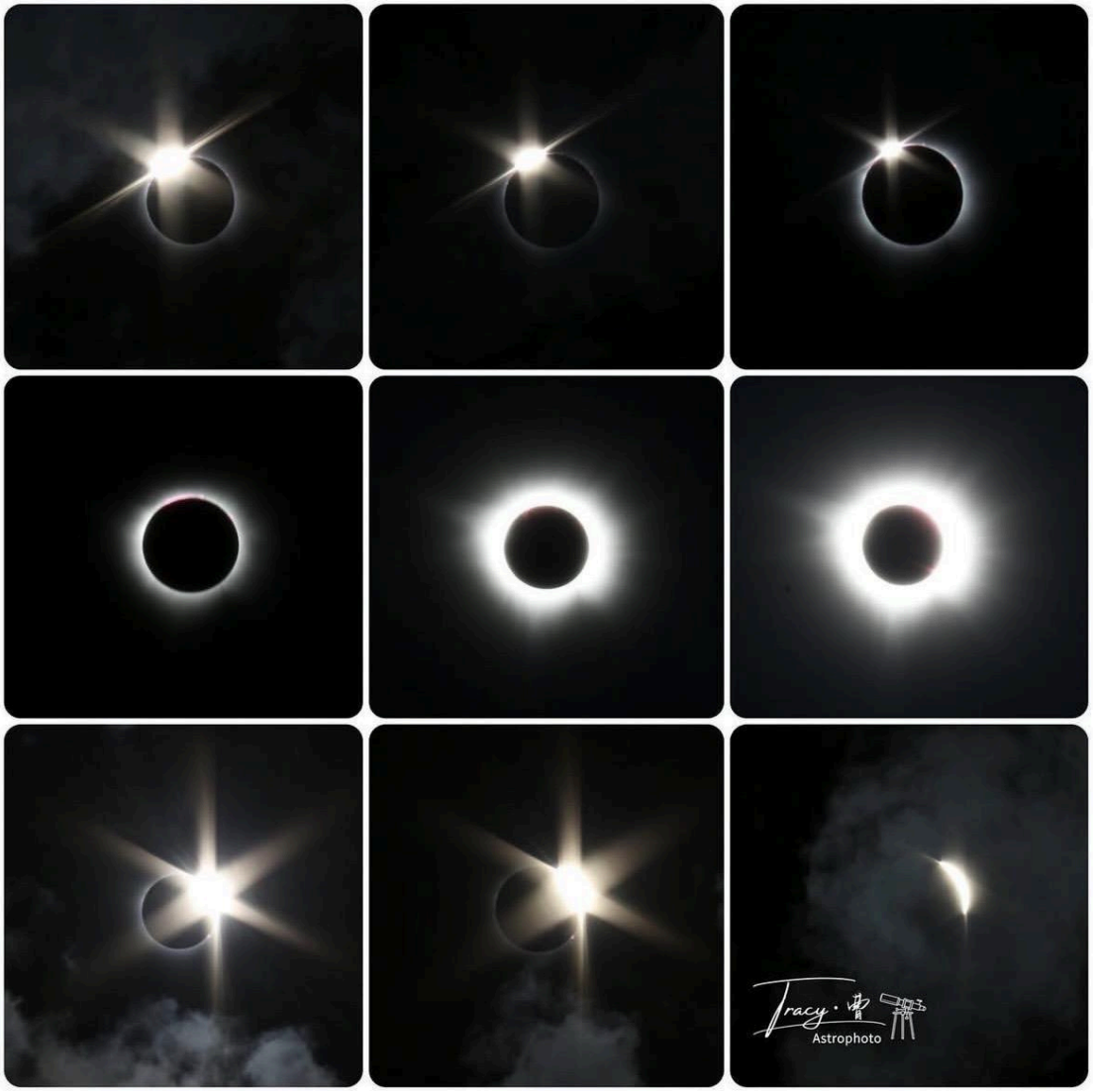

Photo credit: Tracy Cao

1. Different Kinds of Solar Eclipse

- **Partial Eclipse** - A partial eclipse occurs when the Moon passes between the Earth and the Sun, but does not completely cover the Sun. As a result, the Sun appears in a

crescent shape. Since part of the Sun remains visible throughout the event, a certified solar filter must always be used when viewing or photographing it.

- **Total Eclipse** - A total solar eclipse occurs when the Moon completely blocks the Sun. During the brief period known as "totality," photographers can capture the Sun's corona, prominences, and other unique features that are normally hidden by the Sun's bright light. Total eclipses are often considered the most spectacular type of solar eclipse
- **Annular Eclipse** - An annular eclipse occurs when the Moon is farther away from Earth in its orbit and appears slightly smaller in the sky. Because it cannot completely cover the Sun, a bright ring of sunlight remains visible around the Moon, creating what is commonly called the "Ring of Fire" effect. Unlike a total solar eclipse, a solar filter must remain on throughout the entire annular eclipse because the Sun is never fully covered.
- **Hybrid Eclipse** - A hybrid solar eclipse is a rare event that appears as a total eclipse from some locations and an annular eclipse from others due to Earth's curvature. Because of its rarity, many eclipse enthusiasts consider it one of the most unique eclipses to witness and photograph.

August Solar Eclipse

On **August 12, 2026,** a **total solar eclipse** will cross parts of Greenland, Iceland, northern Spain, a small portion of Portugal, and northern Russia.

- This eclipse is especially significant because it will be the first total solar eclipse visible from mainland Europe since 1999.
- The path of totality is approximately 190 miles (305 kilometers) wide.
- For most observers, totality will last less than two and a half minutes.

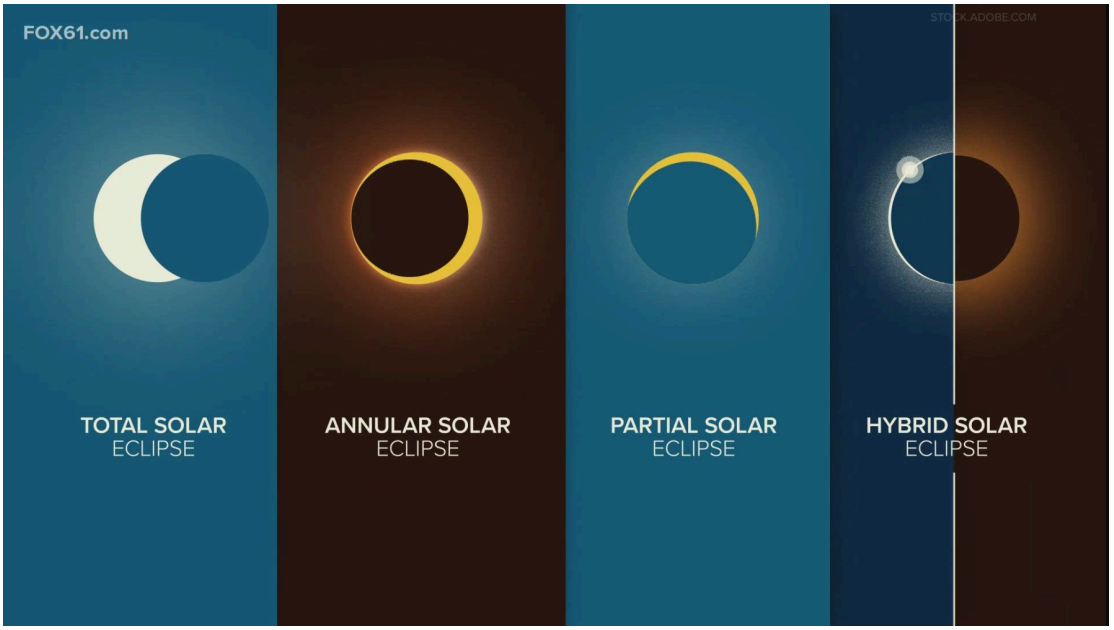

Photo credit: FOX61

2. Phases of a Solar Eclipse

- **First Contact** - The eclipse begins when the Moon first appears to touch the edge of the Sun. This marks the start of the partial phase.
- **Partial Phase** - As the Moon moves across the Sun, photographers can capture the changing crescent shape of the Sun. Solar filters are required during this phase.
- **Maximum Eclipse** - The eclipse reaches its peak coverage. For a total eclipse, this is totality. For an annular eclipse, this is when the "Ring of Fire" is visible.
- **Final Partial Phase** - The Moon gradually moves away from the Sun, revealing more sunlight. Solar filters remain necessary whenever any part of the Sun is visible.
- **Last Contact** - The eclipse officially ends when the Moon completely leaves the Sun's disk.

August Solar Eclipse

In Spain and Portugal, totalit will occur shortly before sunset, creating a rare opportunity to photogrpah a "sunset eclipse" with the Sun low on the horizon.

- The eclipse begins as a partial eclipse at **15:34 GMT**
- Totality — the most spectacular part of the eclipse — begins at **16:58 GMT**
- The greatest eclipse occurs at **17:46 GMT**
- Totality ends at **18:34 GMT**
- The partial eclipse ends at **19:57 GMT**

Photo credit: Tracy Cao

3. Essential Equipment

- **Digital Camera** - You can choice between a DSLR, mirrorless, or dedicated astronomy camera (personal preference!) Any of these options can capture a solar eclipse, so use whatever equipment you are most comfortable with.

- **Telephoto Lens or Telescope** - Different focal lengths will produce different results when photographing a solar eclipse. Generally, the longer the focal length, the larger the Sun will appear in your image, allowing you to capture more detail.
- **Solar Filter (MOST IMPORTANT)** - A certified solar filter protects both your eyes and your camera equipment from the Sun's intense light. Never look at or photograph the Sun through a camera, telescope or binoculars without proper solar filtration. For total eclipses, filters should only be removed during totality when the Sun is completely covered.
- **Tripod** - A sturdy tripod helps maintain stability throughout your shoot and reduces camera shake, resulting in sharper images. It also saves you from holding heavy equipment for long periods of time.
- **Extra Batteries and Memory Cards** - While the eclipse itself may only last a few hours, the preparation, waiting, and photography can take up most of the day. Bringing extra batteries and memory cards ensure you won't miss important moments throughout the event!
- **Remote Shutter Release (optional)** - A remote shutter release helps reduce vibrations caused by pressing the shutter button manually. This can be especially useful during totality when slower shutter speeds may be needed to capture details in the Sun's corona.

Photo credit: American Academy of Ophthalmology

4. Planning Ahead

- **Research the Eclipse Path** - Before eclipse day, determine whether your location will experience a partial, annular, or total eclipse. Different locations can offer dramatically different viewing experiences, so planning ahead can help you maximize your opportunities.
- **Check the Weather Forecast** - Even the best equipment cannot see through clouds. Keep an eye on weather conditions in the days leading up to the eclipse and be prepared to travel if necessary.

- **Arrive Early** - Give yourself plenty of time to set up your equipment, troubleshoot any issues, and find the best composition before the eclipse begins.
- **Practice Before Eclipse Day** - Familiarize yourself with your camera, lens, or telescope before hand. Practicing on the Sun (with a solar filter attatched) can help you become comfortable wtih focusing and camera settings.

Photo credit: NewScientist

5. Camera Settings for Beginners

- **Shoot in RAW Format** - RAW files contain more image data than JPEGs, making it easier to edit and recover details later.
- **Use Manual Focus** - Autofocus can struggle when photographing the Sun. Once the Sun appears sharp, switch to manual focus to prevent the camera from refocusing unexpectedly.
- **Keep ISO Low** - A lower ISO, such as 100 or 200, will generally produce cleaner images with less digital noise.
- **Take Test Shots** - Before the eclipse begins, take practice photos and adjust your settings as needed. This will help reduce stress when the eclipse reaches its most exciting moments.
- **Bracket Exposures** - Try taking multiple images at different exposure settings. Since the brightness of the eclipse can change dramatically, especially during totality, exposure bracketing increases your chances of capturing the best image.

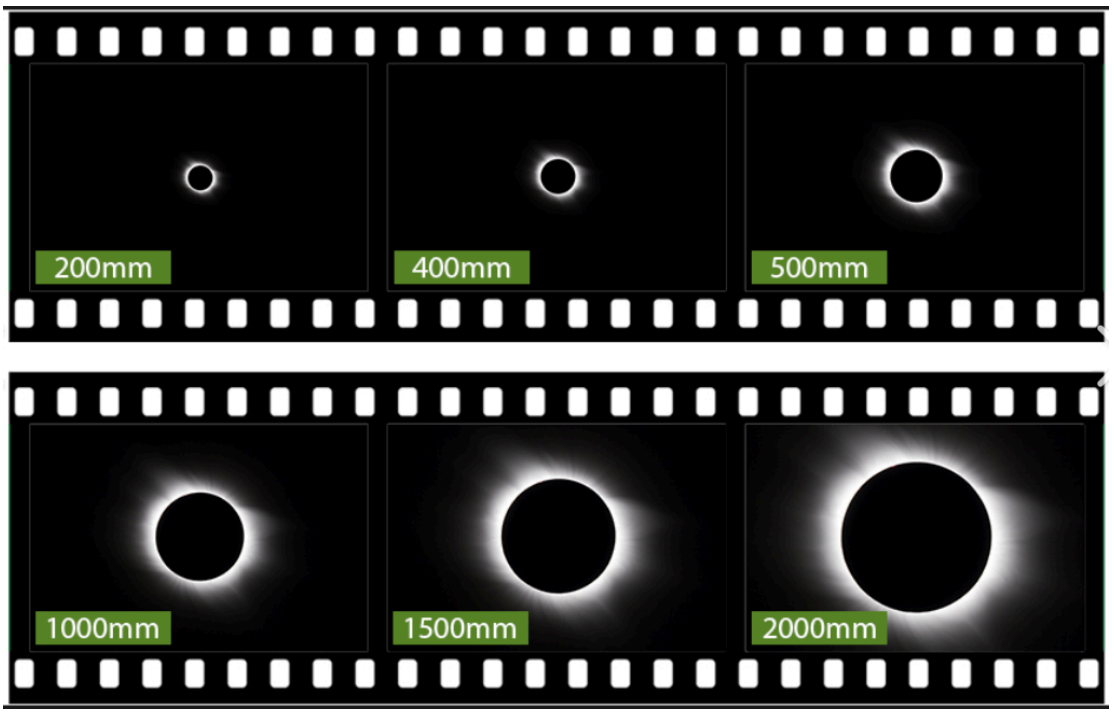

Photo credit: Pixelrz Tweet

6. Common Mistakes

- **Forgetting a Solar Filter** - This is one of the most serious mistakes a beginner can make. Looking at or photographing the Sun without a certified solar filer can damage both your eyes and camera equipment. Always double-check that your filter is securely attatched before pointing your camera at the Sun.
- **Waiting Until Eclipse Day to Practice** - Many beginners assume they can figure everything out during the event. However, learning how to use your equipment ahead of time will help you feel more confident and avoid unnecessary stress.
- **Not Checking the Weather** - A perfect setup won't matter if clouds block your view. Monitor the forecast in the days leading up to the eclipse and have a backup location in mind if possible.
- **Changing Settings Too Often** - Constantly adjusting camera settings can lead to confusion and missed opportunities. Have a plan beforehand and make adjustments only when necessary.

Photo credit: North Country Public Radio

7. Personal Advice from Astrophotographer Tracy Cao

- **Planning** - Make sure you are familiar with your viewing site before eclipse day. There will likely be many other photogaraphers and eclipse enthusiasts around you, so having a plan can help reduce stress. If possible, visit the location beforehand. You never turly know what a site looks like until you see it in person, and scouting ahead can help you find the best composition and viewing angle.
- **Timing** - Every solar eclipse follows a specific schedule. If the eclipse occurs closer to noon, the Sun will be higher in the sky, making it easier to view from most locations. However, if it occurs closer to sunrise or sunset, make sure your view is not blocked by trees, buildings, mountians, or other obstacles.
- **Equipment** - Since eclipse photography can last several hours, make sure you have the proper equipment and plenty of backups. Extra batteries and memory cards are highly recommended, as well as testing your equipment before the event. The last thing you want is to discover a problem with your camera or telescope when the eclipse is already underway.

> "Don't only focus on capturing, make sure to also look with your eyes. Using your eyes versus your equpiment are completely different experiences."

Photo credit: Tracy Cao

Author: Allison Chen