

# Photographing The Total Solar Eclipse

A Checklist to Prepare for DSLR Photography, by John Shaw

- Fully charged battery (and a spare fully charged battery just in case).
- Large memory card—you don't want to have to change a card during the eclipse.
- Shoot RAW which gives you the widest latitude for correcting exposures.
- Manual exposure mode, strongly recommended.
- Remote shutter release.
- Motor drive rate set to Continuous at a rate of about 3 or 4 frames/second. You can still shoot just one frame, or hold the shutter down for several frames.
- Metering mode, matrix (Nikon), evaluative (Canon).
- High ISO Noise Reduction OFF—it is not applied to RAW anyway.
- Set an aperture about one or two stops down from wide open. Stay at this aperture for the entire shoot.
- Flash OFF.
- Use Live View for focusing if camera is so equipped.
- Mirror lockup OFF—when using Live View the mirror is already up.
- Turn Auto Focus OFF.
- Optional: Set the Image Review feature to show the photo taken, and its histogram, immediately after the exposure was made (even with the camera in Live View mode). This allows you to see what you have recorded without touching the camera. The playback photo only stays "on" for a few seconds, but you can take another photo at any time. There is no need to turn this feature off. Nikon: set in Playback menu. Canon: set in red menu tab with camera body symbol.
- Make sure your tripod securely supports your lens and that the tripod head allows aiming upwards with the lens mounted (40 to 55 degrees upward in the western US, 60 to 65 degrees upward in the east). Use your tallest tripod.
- Remember you must continue tracking the sun for this entire shoot.
- Practice, practice, practice. For most of us this will be a once-in-a-lifetime experience. Take test shots now using your solar filter to determine a starting ISO and exposure having just the sun in the frame.

With solar filter **ON** for partial phase as moon starts to cover the sun and afterwards when total eclipse conditions are over:

- Focus using Live View and recompose/shoot with Live View ON for partials.
- Check the exposure by reviewing the photos and adjust as needed. If you are using a Mylar solar filter, the sun should be "light" in tone.
- Do not clip the right side of the histogram.
- **Remove solar filter just before totality, increase the shutter speed a stop or two, and hold down the shutter for Diamond Ring and Baily's Beads.**



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With solar filter **OFF for totality**:

- Focus remains the same.
- Set slower shutter speed, around 1/125 second.
- Set lower ISO, around 100.
- Stay at the same aperture and widely bracket shutter speeds in one stop increments. If possible, try to shoot 1/2000 to 1/8 or slower, then bracket back up again to 1/2000.
- Bracket exposures by manually changing shutter speeds. If your camera has an automatic bracketing mode, learn how to quickly turn it on and off. At a minimum you want 4 or 5 frames in one-stop increments. Most current Canon bodies offer a 7 stop bracket while most current Nikon bodies offer a 9 stop bracket. Don't use less than one-stop increments. With Continuous advance turned on, hold the remote shutter release down and the camera will fire a continuous sequence of bracketed images and then stop. Let go of the button, then push and hold again for another sequence.
- Keep shooting bracketed images through the second Diamond Ring.
- **Replace solar filter and reset to Solar Filter On values.**

**DO NOT LOOK AT THE SUN DIRECTLY WITHOUT ECLIPSE GLASSES, OR LEAVE THE CAMERA POINTED AT THE SUN FOR MORE THAN A VERY SHORT TIME WITHOUT USING A SOLAR FILTER. ONLY DURING TOTALITY IS IT SAFE TO LOOK AT THE SUN AND REMOVE THE FILTER.**

Here is my eclipse photo plan (and I'm going to stick with this for at least another few minutes):

- Nikon D5 and 600mm f/4.
- With solar filter on, ISO 800, 1/400 second @ f/5.6 (I'll keep this aperture for the entire shoot). I determined this exposure using my particular camera, lens and solar filter, but your starting exposure might be different. **Run some tests before eclipse day.**
- Just before totality, for the Diamond Ring and Bailey's Beads, take the solar filter off and increase shutter speed.
- For totality, quickly change to: ISO 100, 1/125 sec shutter speed, and 9-stop bracketing. FYI, in the Custom Settings Bracketing Order option I've changed the default "metered>under>over" sequence to "under>metered>over" as that seems more logical to me.



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