Practical ideas for the use of the 20x lens and mobile phone during the eclipse

The app “Eclipse Camera 2020” makes it quite easy to obtain valuable images of a total eclipse of the Sun. Practice is very important, especially to understand focus and pointing. The only equipment needed is the mobile phone, the lens (with its attachments), and a solar filter. A black cloth for shade and an elevated platform for the tripod (or a bigger tripod) will be helpful at eclipse time. During the eclipse alignment, having a blank piece of paper or cardboard to see the shadow of the phone and lens setup will aid in getting the pointing right.

/ 1 / Be sure that all other apps are turned off and that the camera is fully charged. The app accesses GPS, which consumes power. Ensure that there is at least 1GB of data space available for the eclipse images.

/ 2 / Be sure to update your own copy of the app “Eclipse Camera 2020”, which may have last-minute adjustments. Launch the app, find the Settings menu and enter the details of your equipment, then switch the phone off to save power.

/ 3 / Fit the U-shaped lens clamp to the phone, using the alignment tool (threaded insert with a small aperture) to position it exactly over the phone’s front camera. Screw the clamp down firmly.

U-shaped clamp for the mobile phone

Alignment tool

/ 4 / Unscrew the alignment tool and replace it with the lens. If you don’t have a neutral-density solar filter, make one ingeniously out of a pair of eclipse glasses.

/ 5 / Attach the lens to the clamp, grasping the lens towards the rear for balance, and screw the assembly on to the tripod. If necessary rotate the lens in the clamp so that the mobile phone has a convenient location not interfering with the tripod. The small tripod provided with the lens is OK but will need an elevated platform for convenience; a larger tripod can also be used.

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/ 6 / Use the app in “Practice Image Capture” mode before the eclipse, finding a distant object in “Calibrate Lens” mode. Calibrate the phone’s compass by rotating it in figure-8 motions (to “High” if possible). Find a target manually in “Calibrate Direction” and press “Set”; the app will provide a pointing tool that lets you quickly find the target again. This step is not essential but may be convenient.

/ 7 / Find a good location for the system during the eclipse and arrange some shade for the camera screen, which will need to be set to its brightest during the final steps.

/ 8 / During the partial eclipse, PLACE THE FILTER IN FRONT OF THE LENS FIRST. Then point the camera at the Sun and check the focus, using “Practice Image Capture” mode. This requires patience since the field of view is only a few degrees. Do not wait until the last minute for this step. Re-do the pointing and focusing a few minutes before totality.

/ 9 / A few minutes before totality, enter “Eclipse Image Capture” mode. The app knows when the eclipse is so the exact time for this step does not matter.

/ 10 / When the app sounds its tone at 15 seconds before totality, REMOVE THE FILTER FROM THE FRONT OF THE LENS. Try not to misalign the camera while doing this. Then let the camera do its thing and simply enjoy the eclipse!

/ 11 / After the third contact, replace the filter or simply pack up.