



GLOBE AT NIGHT

Activity Guide for How Dark Does the Sky Get During a Solar Eclipse?

www.globeatnight.org/eclipse-2017/

August 21, 2017

“On August 21, 2017, millions of people across the United States will see nature's most wondrous spectacle — a total eclipse of the Sun. It is a scene of unimaginable beauty; the Moon completely blocks the Sun, daytime becomes a deep twilight, and the Sun's corona shimmers in the darkened sky.” For more information on the total solar eclipse (e.g., locations for the eclipse path and the local times for totality), visit www.greatamericaneclipse.com.

If you are on or near the centerline of the path of totality during the solar eclipse on August 21, 2017, you are able to participate in an activity to observe and record the faintest stars visible as a means of measuring how dark the daytime sky gets. By locating and observing the constellation Ursa Major (e.g. the Big Dipper) midway during the solar eclipse and comparing it to stellar charts, your “measurement” and submission of that measurement to the online database will document darkness levels of a daytime sky during a total solar eclipse. Your measurement will help scientific research.

To help the research more, you can also take regular Globe at Night measurements of the night sky brightness on August 20 and August 21 for comparison with the eclipse measurements. To take the nighttime Globe at Night measurements, go to www.globeatnight.org/webapp/. The steps are similar to the ones described here under “Easy Steps to Do This Activity”.

Materials Needed to Do This Activity:

All you need is a smart mobile device and internet access to www.globeatnight.org/eclipse-2017/webapp/ for the report page,

OR you can use the paper version of the report page in this guide & submit your observation(s) to the URL address later.

Remember: Safety First!

- When any part of the Sun is visible, do not look at the Sun without approved solar filters such as eclipse glasses from a reputable source that are used properly. Failure to heed this rule may result in permanent eye damage.
- During the two and a half minutes of the **total** solar eclipse, it is safe to look directly at the Sun's corona with your eyes. However, when totality ends and the sky suddenly brightens, immediately turn your eyes away and put your solar filters or eclipse glasses back on.

Easy Steps to Do This Activity:

Spend the first minute of totality concentrating your attention on the Sun's corona and the light show in the sky. Then spend the next minute of totality doing the following Globe at Night activity to measure the darkness of the daytime sky during totality. No eclipse glasses are needed for this activity.

- 1) **Record local time.** Using the online report page, the time will be automatically inputted if you are using a smart device. Otherwise record the local time on the online report page or the paper version (page 3) of the report page.
- 2) **Record your location** (latitude and longitude) using either:
 - a. The interactive tool on the online report page at www.globeatnight.org/eclipse-2017/webapp/. With a smart cell phone or tablet, the latitude and longitude are automatically determined as you report the observation. If you are reporting it later from your computer, input the address of the observation or input your city. Zoom in/out and pan around until you find the observation location. The latitude and longitude will be displayed.
 - b. A GPS unit where you take a measurement. Report as many decimal places as the unit provides.
 - c. A topographic map of your area.
- 3) **Find your constellation.** No matter where you are on the solar eclipse path centerline, the planet Venus and the star Capella will be visible during totality. Besides the eclipse, they will be the brightest objects in the sky. Look between them and follow an imaginary line toward your eastern horizon (for the NW USA) or your northeastern horizon (for the SE USA). As you do so, you will see stars that form a big dipper or spoon (Ursa Major).
- 4) **Match your sky to one of our magnitude charts** using the online report page at www.globeatnight.org/eclipse-2017/webapp/ or the paper version (page 2). Select and report the chart that most closely resembles what you see.
- 5) **Estimate the cloud cover.** Select and report one of the 4 illustrations that most closely resembles what you see: clear sky, 25% of sky covered by clouds, 50% covered, or more than 50% covered.
- 6) **Sky Quality Meter measurements** are optional. See Unihedron.com for more information on these devices.

Compare your observation(s) to others along the eclipse path. Check back at www.globeatnight.org/eclipse-2017/ at a later date to view the map of measurements or become part of our Globe at Night Facebook page to be notified.

Charts in this document were prepared
by Jenik Hollan, CzechGlobe

<http://amper.ped.muni.cz/jenik/astro/maps/GaNight/2017/2017-08-21SolEcl/>

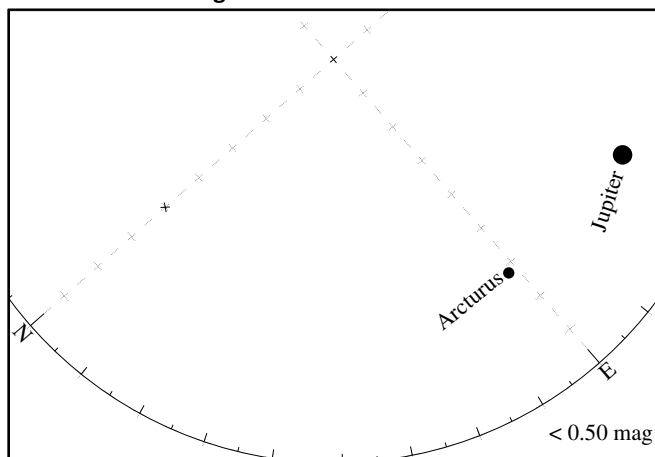


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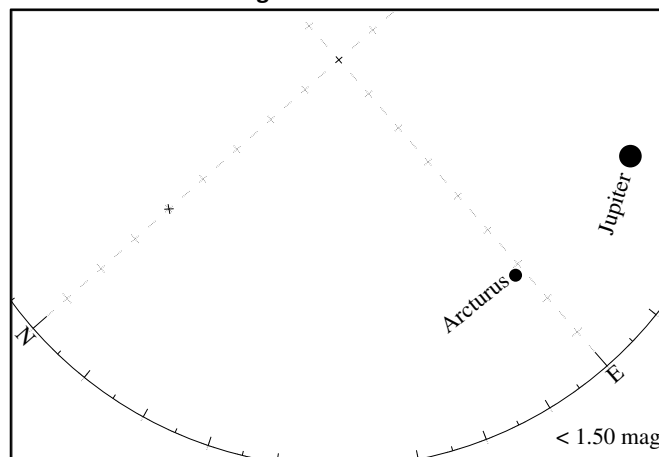
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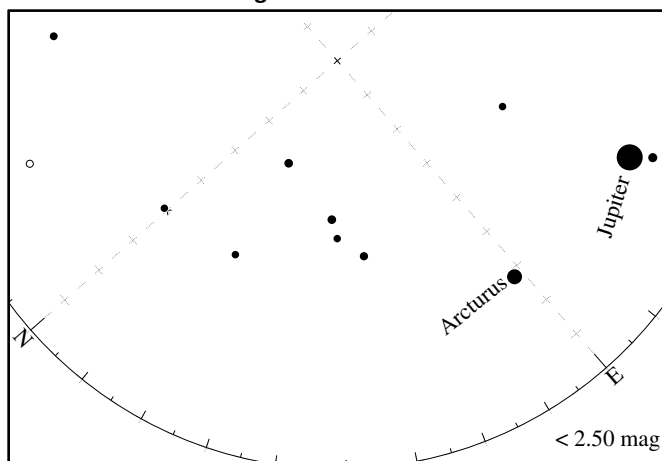
Magnitude Below 1 Chart:



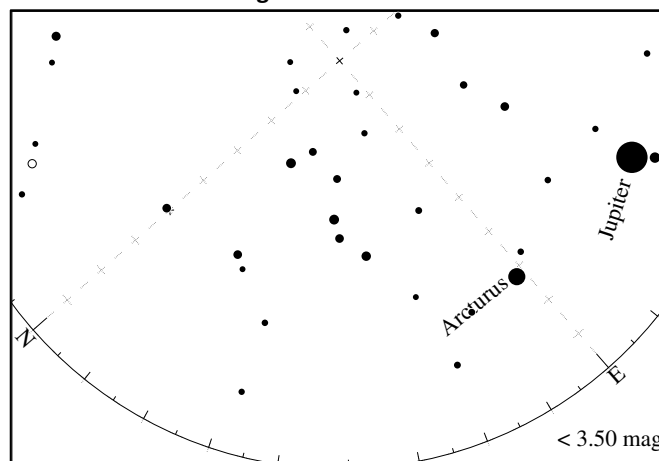
Magnitude 1 Chart:



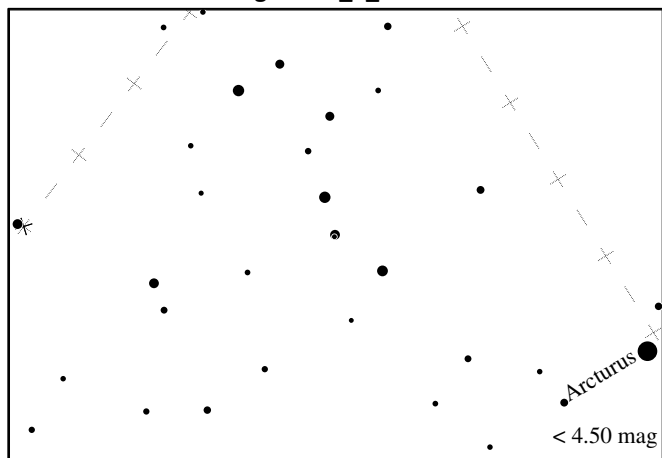
Magnitude 2 Chart:



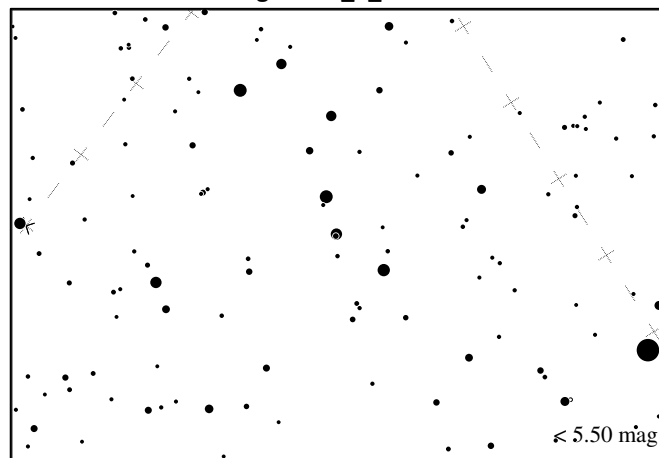
Magnitude 3 Chart:



Magnitude_4_Chart:



Magnitude_5_Chart:





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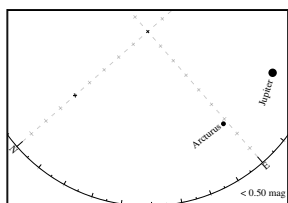
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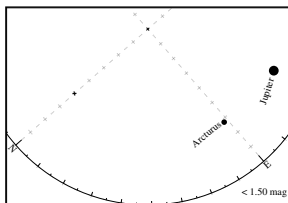
Only fields marked by * are required.

*Month: August *Day: 21 *Year: 2017
 *Observation Time: : PM local time (HH:MM) *Country: USA
 *Latitude (in deg/min/sec deg min sec (North)
 or decimal degrees): decimal degrees
 *Longitude (in deg/min/sec deg min sec (West)
 or decimal degrees): decimal degrees
 Comments on location: (e.g. There is building within 50 m to the NE that is blocking my view.)

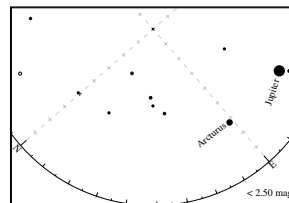
* Match your solar eclipsed daytime sky to one of our magnitude charts:



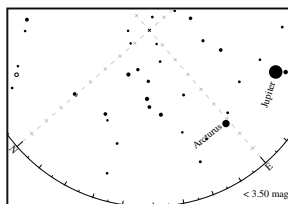
☐ No stars visible



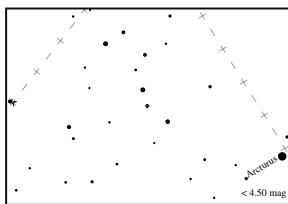
☐ Magnitude 1 Chart



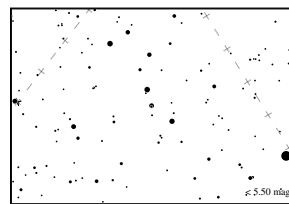
☐ Magnitude 2 Chart



☐ Magnitude 3 Chart



☐ Magnitude 4 Chart



☐ Magnitude 5 Chart

Reading from the Unihedron Sky Quality Meter (if applicable):

Serial number from the Unihedron Sky Quality Meter (optional):

*Estimate the cloud cover in the sky:

☐ Clear ☐ Clouds cover ¼ of sky ☐ Clouds cover ½ of sky ☐ Clouds cover > ½ of sky

Comments on sky conditions: (e.g. a little haze to the northeast)

Report online at www.globeatnight.org/eclipse-2017/.