



Citizen Science Kit: MEASURING LIGHT IN THE NIGHT

Help gather light pollution data.

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This kit contains resources to help you learn about and monitor light pollution near you. Light pollution is intrusive artificial (usually outdoor) light that can have negative consequences. The good news is that it's relatively easy to fix!

WHY THIS MATTERS

Too much light pollution can wash out starlight in the night sky, disrupt human and animal sleep, interfere with ecosystems, have adverse health effects, and waste energy. The data you share through this project and kit is used by scientists to monitor levels of light pollution and help inform steps you can take to address the impacts of light pollution.



Emily Maletz / SciStarter

KIT COMPONENTS

Sky Quality Meter - (SQM-L) - hand-held meter for measuring sky brightness

Red LED flashlight - designed to help guide user to nighttime viewing areas without disrupting night vision or nocturnal animals who are less sensitive than humans to the red range of light

Planisphere - rotating star finder to help you identify the constellation you'll need to find based on the date

REQUIRED, BUT NOT INCLUDED

Smartphone, tablet, or computer
Wi-Fi or cellular data

OPTIONAL

Globe at Night Data Entry Sheet - if you'd like to log your data manually, print a copy from cfpl.info/globedata

Sky Quality Meter Instructions - helpful for troubleshooting, view online at cfpl.info/sqm

PREPARE

STEP 1: Scan this QR code or visit cfpl.info/nightlight for an online version of these instructions, how-to videos, and other resources. This is also where you can **create your free**

SciStarter account (optional) if you haven't already. SciStarter is an online citizen science hub connecting millions of people from all walks of life to thousands of opportunities to participate in citizen science.



KEY TERMS

Light pollution: the inappropriate or excessive use of artificial light, which can have environmental, economic, and health consequences for humans, wildlife, and our climate

Planisphere: a circular star map covering a specific latitude that can be adjusted to reflect a specific time and place

PLAN

STEP 2: Choose a clear night when the moon is not up and when you can go outside at least an hour after sunset.

STEP 3: Decide if you will be using the Globe at Night Data Entry Sheet or a device with Wi-Fi or cellular data service to directly enter your data at SciStarter.org/LightPollution.

STEP 4: Use the red LED flashlight to guide you outside if needed. Red light is less disruptive to your night vision than other types of light. Bring the kit with you, including your phone, tablet, or the data worksheet and a pencil (so you can use the data sheet multiple times). **Allow your eyes to adjust to the night sky**, and then use the planisphere to find a constellation.

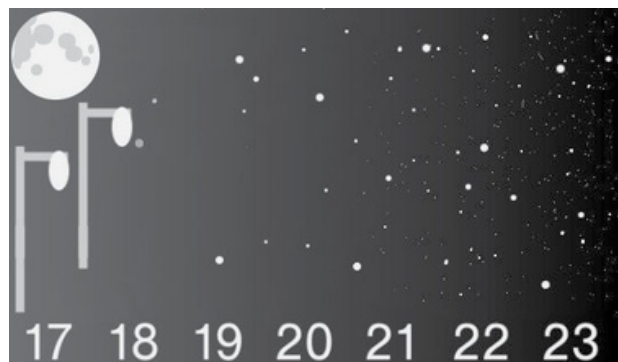
STEP 5: Either online or on a printed Globe at Night Data Entry Sheet, **record the date, time, and location**. Make a note of the constellation you're observing and the sky conditions as outlined on the web app or data sheet. Jot down the email address you used to create your SciStarter account, where noted at the bottom of the sheet.

PARTICIPATE

STEP 6: Press the power button on the Sky Quality Meter (don't face it directly at light such as the moon or a streetlight; review the device's printed instructions again if needed). The lower the number on the SQM, the higher the light pollution. Write the SQM's serial number and light magnitude number on the data sheet.

STEP 7: If you used the paper data sheet, be sure to enter your data online at SciStarter.org/LightPollution. Don't forget to include your SciStarter email in the online Globe at Night data input form to get credit for your contributions in your SciStarter Dashboard. On the Globe at Night website, you can also review data from around the world!

STEP 8: Turn off the SQM and LED light and return all the materials to the kit. If you can, continue recording light pollution data while you have the kit and as weather permits.



The higher the number, the darker the sky.

A reading of 20 or 21 indicates a dark sky where stargazing is at its best and the stars of the Milky Way are clearly visible. A reading of 16 or 17 indicates a light sky that is impacted by either artificial light or bright moonlight.

astrotourismwa.com.au

NOW WHAT?

View data submissions (including your own!) at globeatnight.org/maps.php.

TAKE ACTION!

Visit the International Dark Sky Association website at darksky.org to learn more about the issue of light pollution and how you can help make changes to reduce light pollution in your neighborhood!

COMMUNITY CONNECTIONS

Are you a member of the Girl Scouts, 4-H, NASA Night Sky Network, or NSTA? Check out SciStarter.org/library-partners to learn about how this project connects back to your organization.

QUESTIONS?

Email us: info@scistarter.org



Check that all items have been placed back into the kit before you return it to the library.

Thank you for participating in citizen science!

LOOKING FOR MORE?

Find more projects on your SciStarter Dashboard: SciStarter.org/dashboard

Citizen Science Kit: Measuring Light in the Night Contents

AA AND 9V BATTERIES NOT INCLUDED

A Planisphere

B Red LED flashlight

C SQM-L sky quality meter



Total Replacement Cost: **\$185**