

HOW MANY STARS CAN YOU SEE?

Light pollution is a big problem to tackle, but *you* can make a difference!

In this activity, you will use the Loss of the Night mobile app to record how many stars you can see from your home before and after you make some changes to improve your home's outside lighting.

1 - LOOK UP

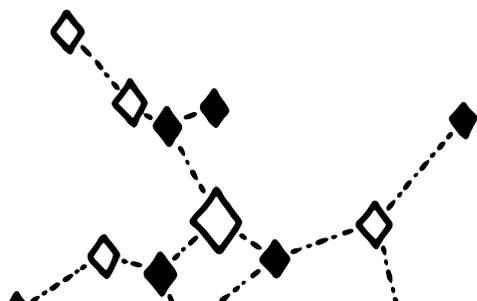
Loss of the Night is a citizen science project that turns your eyes into a light meter, allowing you to report how dark the night sky is where you live. The app guides you to look for specific stars in the sky, directing you to find the dimmest star possible. Through multiple observations, the app works out the Naked Eye Limiting Magnitude (NELM) which relates to the level of skyglow, the brightening of the night sky over inhabited areas.

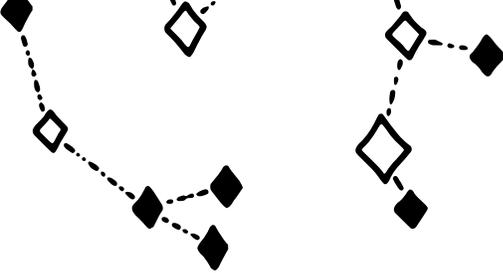
What you need

- ★ A smartphone (Android or iOS)
- ★ A clear, moonless night
- ★ A stable Internet connection

What to do

1. Download the Loss of the Night app for your [Android](#) or [iOS](#) device.
2. Watch a [video tutorial](#) about getting started. If you supply your email address when you set up the app you will be able to see your data on the map at the [My Sky at Night](#) webpage. If you are under 13 years old, check with a parent or guardian before you include your email address.
3. Plan to observe on a clear, moonless night. Find out when sunrise and moonrise are for your location with this [calculator](#) to determine a good time to view. If it isn't dark enough when you are observing the app will warn you. You can still do observations for fun, or you can wait until it is darker.
4. Follow the app's instructions to submit your 8 observations of different stars.
5. Access and visualize your data at the My Sky at Night webpage.
 - a. About 24 hours after you submit your first measurement you may request a token to access your measurements under the "My Measurements" tab.
 - b. To explore the observations that others have made, click on the "Map" tab. The purple circles show how many observations were taken at that location. A red location marker indicates the sky brightness in terms of the NELM in an area with a single observation. The NELM is the brightness of the faintest star that the naked eye can see. The higher NELM, the more stars you can see.
 - c. When navigating the map, clicking on a point or circle brings up more information.
 - d. To analyze trends of how the skyglow is changing over time, zoom in until the "Start" button appears under the Trend Analysis section at the bottom of the purple window, then click and drag to select the area you want to study.





2 - TAKE ACTION

How dark sky friendly is your home? Check out the International Dark Sky Association's [Dark Sky Friendly Home Lighting Program](#) and this City of Vancouver [brochure](#) on how to reduce light pollution. Can you think of some changes you can make to improve your home's exterior lighting? If you feel comfortable with it, you can go a step further by talking to your friends and neighbours about making the skies above your neighbourhood darker together. [Here](#) are some tips from the International Dark Sky association on how to have that conversation.

3 - ASSESS YOUR IMPACT

Once you've made some changes to your exterior lighting, pick a clear night to look up at the sky again and make another observation with the Loss of the Night Sky app. Compare your results with your previous data. What do you notice?

There are variations in how many stars you can see from night to night due to changes in the Earth's atmosphere. For example, smoke and humidity may make it harder to see stars. To make sure that changes are really due to a change in lights, it would be most helpful to have observations from several nights per year. So, if you have the time and are interested in more star hunting, go out and observe your night sky often!

5 - (BONUS) GLOBE AT NIGHT

If you'd like to participate in more citizen science, give the Globe at Night project a try. With Globe at Night, you compare how your night sky looks to a series of star charts. The cool thing about this project is that you don't need a smartphone or an internet connection while you're observing. You can write down what you see on paper and report it later! Check out the campaign dates and constellations for 2020 at the Globe at Night website.

