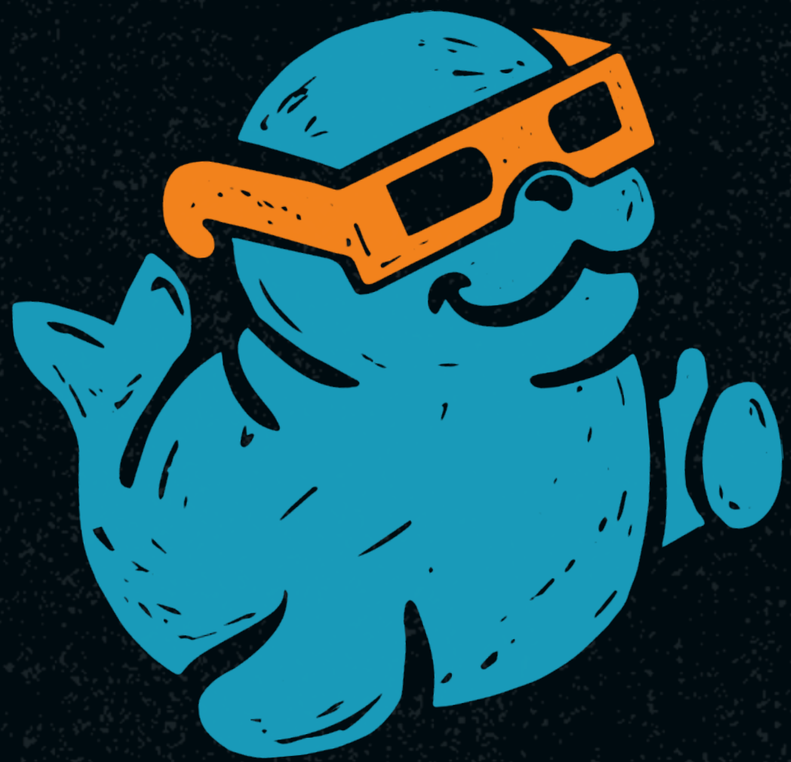

SEAL Solar Eclipse Activities for Libraries

GORDON AND BETTY MOORE FOUNDATION

NASA@ My Library

STAR net Science-Technology Activities & Resources For Libraries

Eclipse Resources for Public Libraries

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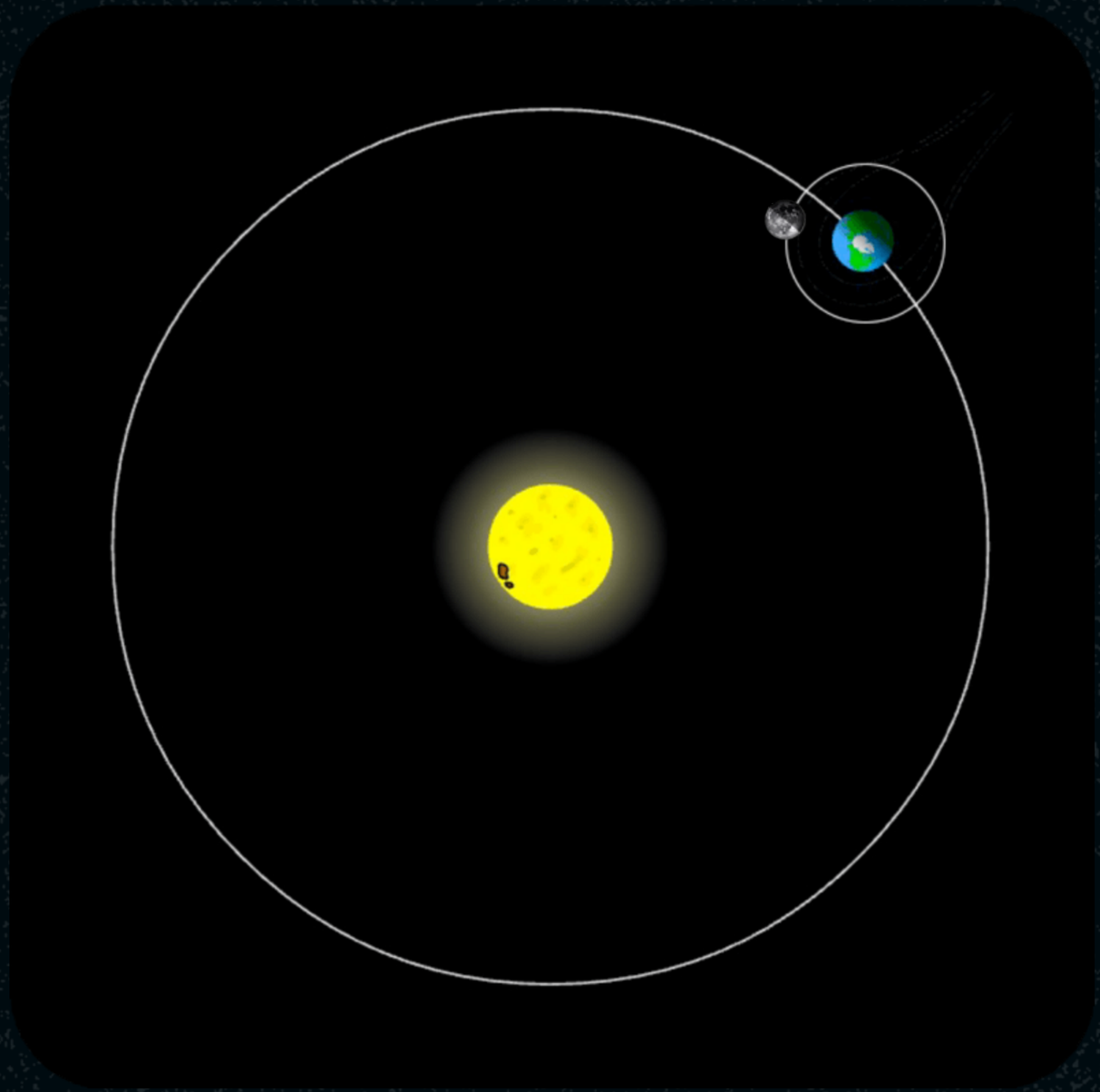
Eclipse 101

Slide deck created by Dr. James Harold,
NCIL's resident space plasma physicist

So what’s going on?

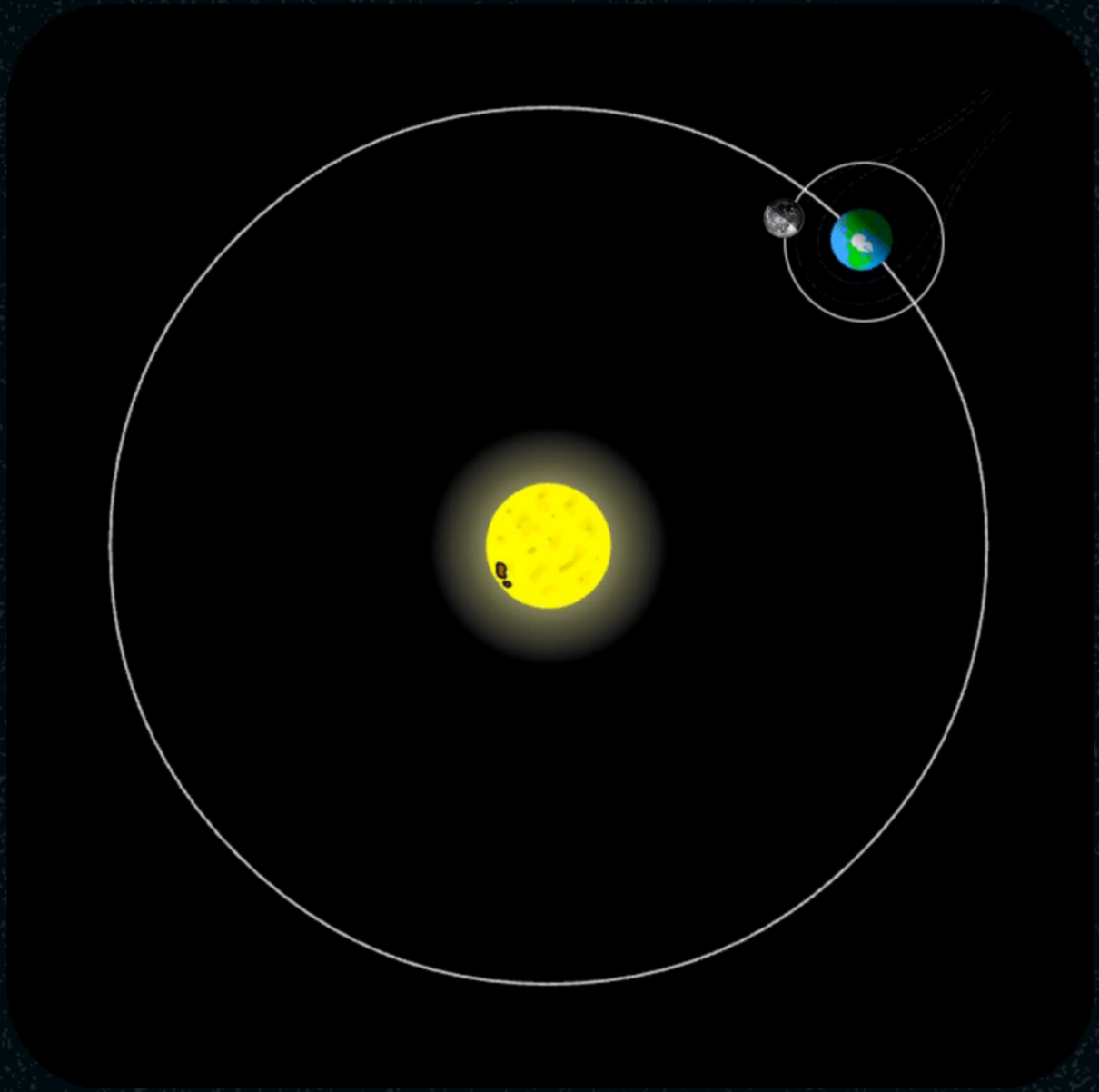
The Moon gets in front of the Sun, casting a shadow on the Earth. The end.



Not so fast.

We have questions!

- Why are solar eclipses rare?
- Why are there different kinds of eclipses?
- What's the big deal with "totality"?
- Is this entire exercise fraught with danger?!



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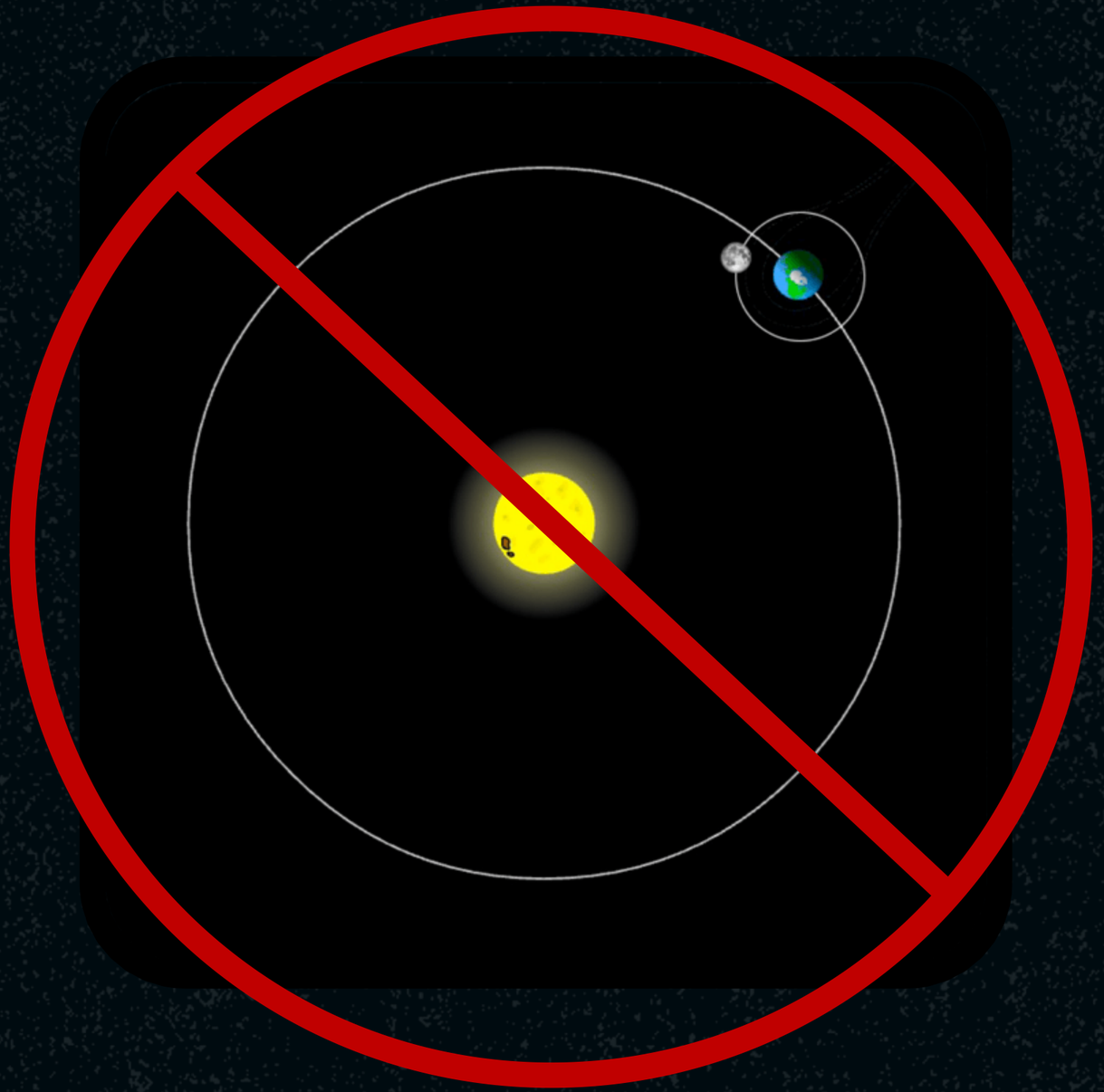
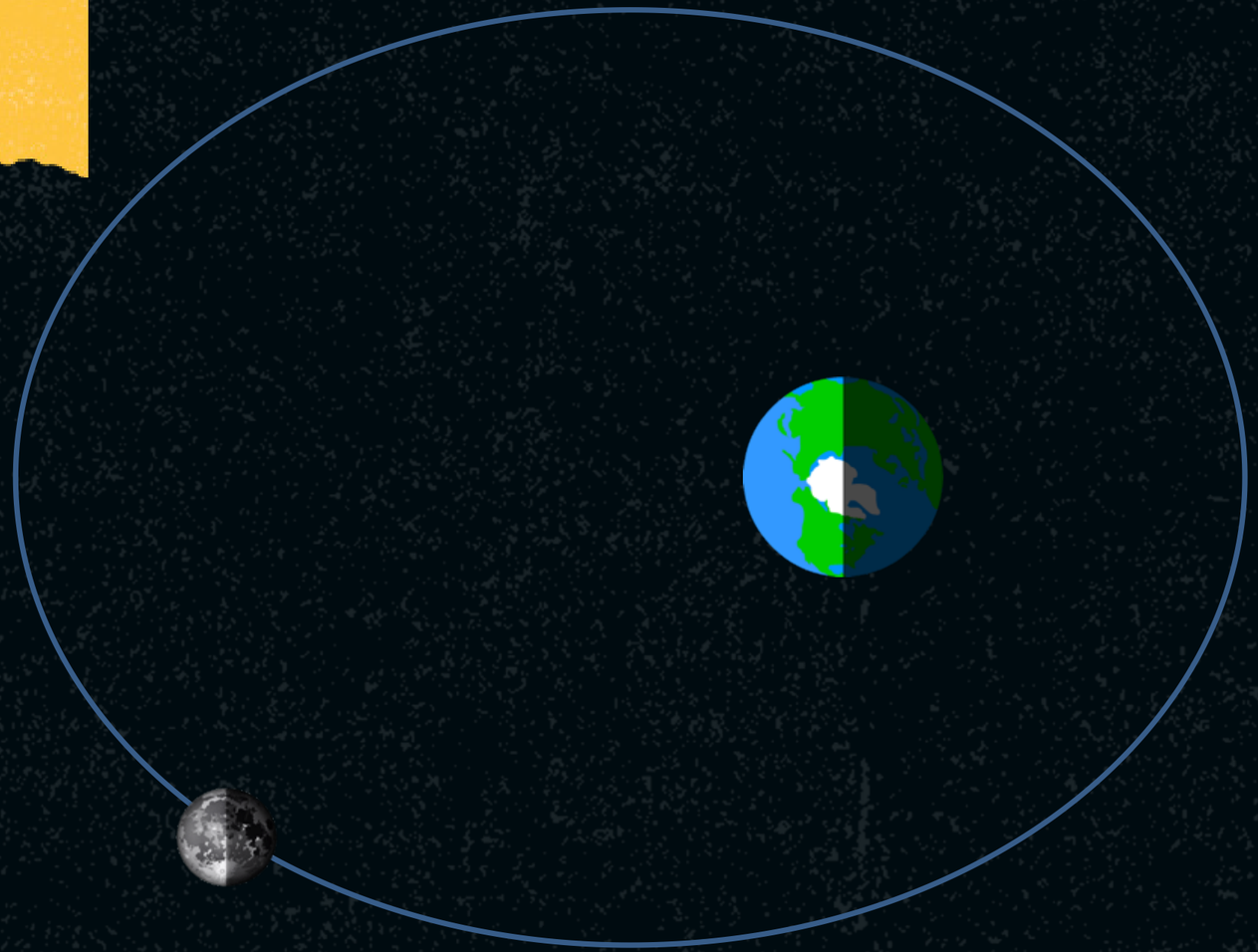


Why not an eclipse every month?

(Sun is still waaaay off the screen)

The animated version

And… “Annular Eclipses”?



(Sun is always going to be way off screen)

Let's demonstrate this concept with an activity!

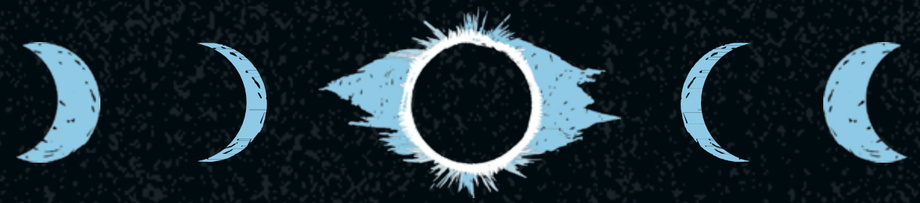
Big Sun, Small Moon

What did we see on October 14th, 2023?

- Partial (with sunspots?)
- Totality, with a ring on it.
- *You will need your eclipse glasses on through the entire event!*

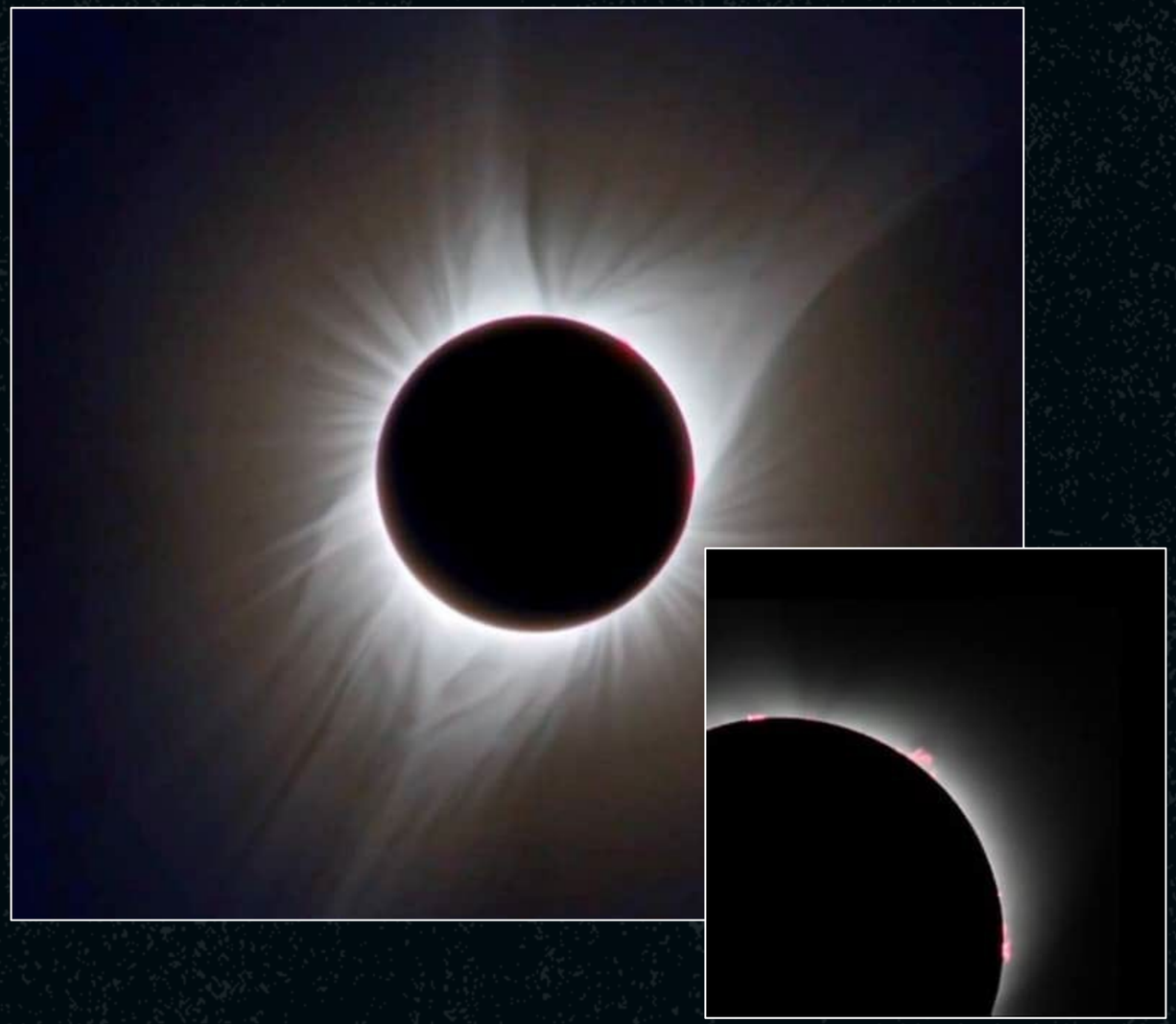
What will we see on April 8th, 2024?

- Partial (with sunspots?)
- Diamond Ring
- Bailey's Beads
- *Totality… glasses off!*



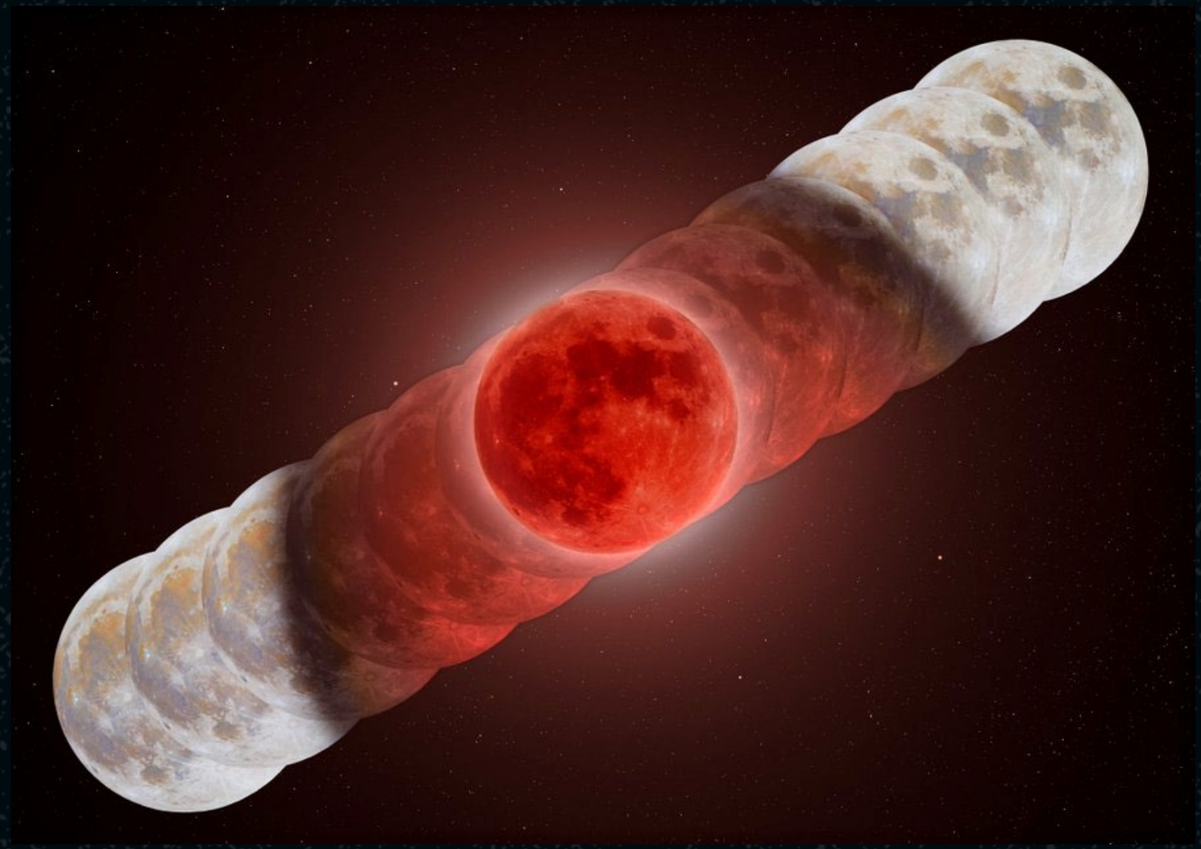
What's so special about totality?

- See the Sun's atmosphere: the solar corona.
- The Sun is 400,000 times brighter than the corona. (Even 99% of an eclipse is too bright to see the corona)
- Totality is the only time you can (and should!) take off your eclipse glasses to look at the Sun.
- Hot gases move along the Sun's magnetic field, tracing its complex structure.
- Solar prominences arch above the Sun's surface.



While we're on the subject: what about "Lunar Eclipses"?

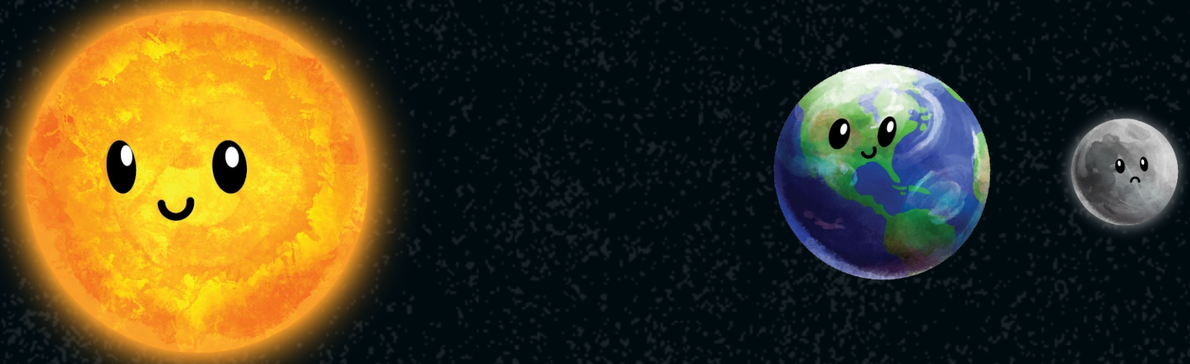
Shadow of the Moon on the Earth during an eclipse. (from the NASA/NOAA DSCOVR spacecraft)



Shadow of the Earth on the Moon during an eclipse. (Courtesy Andrew McCarthy, Cosmic Background).

Review: name this event

Solar Eclipse



Lunar Eclipse

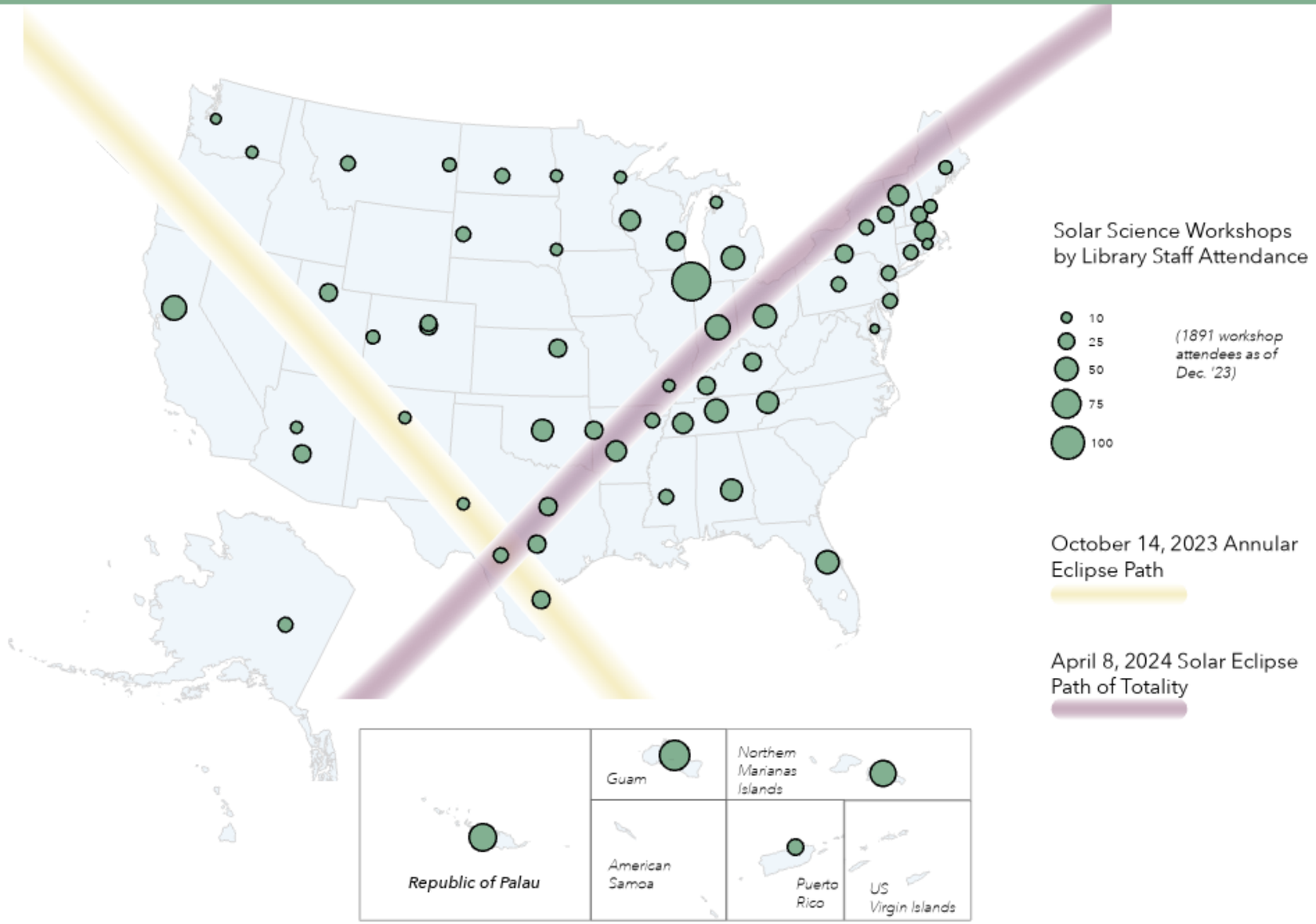
Apocalypse

Distributing 5 million eclipse glasses to public libraries

Solar science kits and trainings in all 50 states and 4 U.S. Territories

Solar Eclipse Activities for Libraries (SEAL)

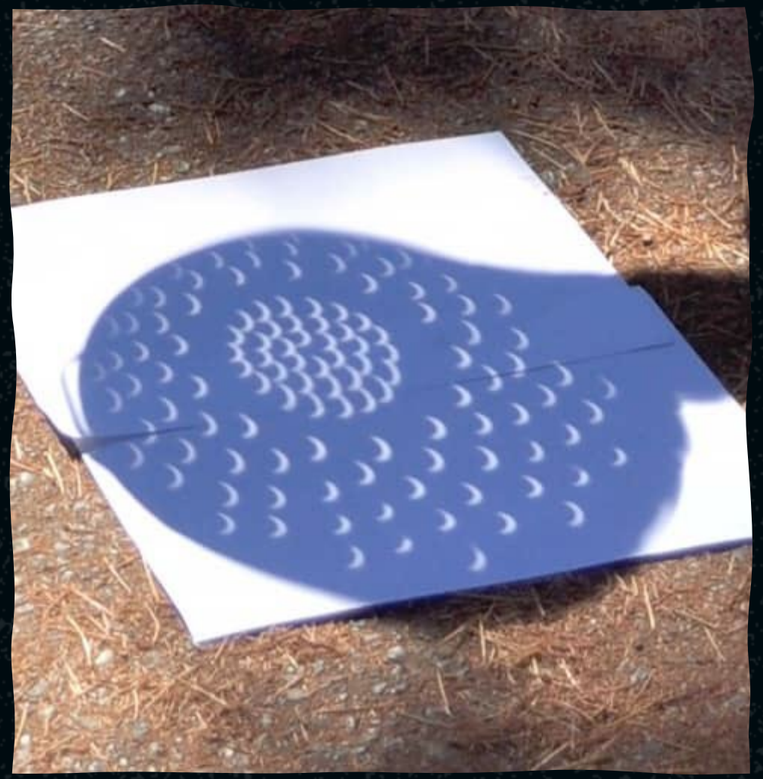
Preparing Libraries for the 2024 Total Solar Eclipse



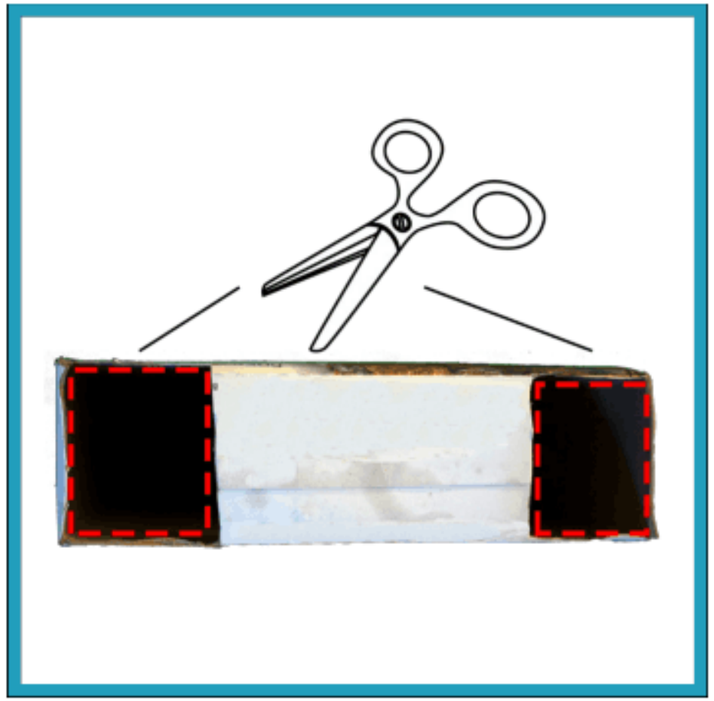
State Library Circulating Kits

Scan the QR Code for access to the PDF version of the kit list. Links to purchase the items are within the PDF too!

bit.ly/SEALkitlist



Indirect/Low-Cost Solar Viewing



1. On one short side of your box, cut two holes with your scissors or craft knife. If necessary, secure this side of the box with tap to hold it together after cutting.

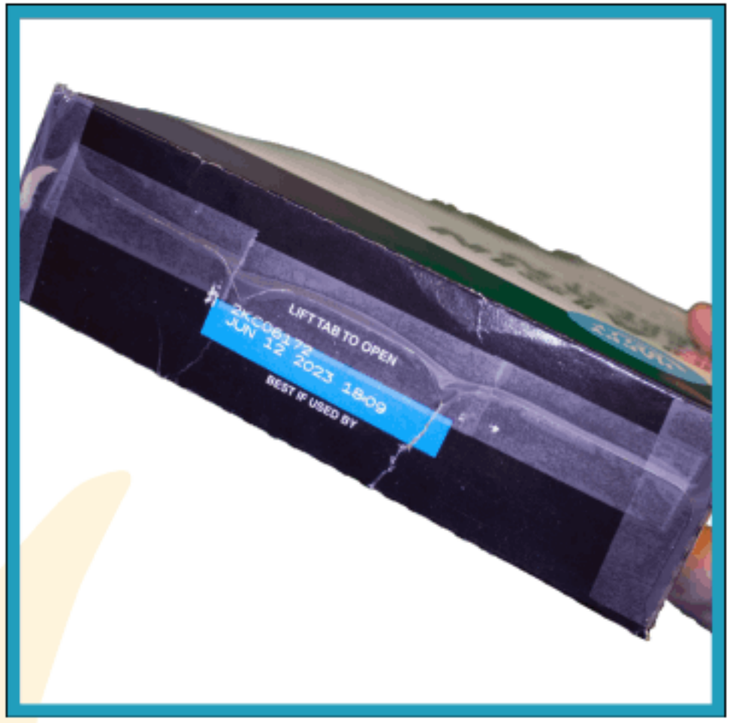
2. Cover one of the holes with foil and secure it with tape.

3. Poke a small hole in the center of the foil using a pen, pencil, or other small pointy object.

Cereal Box Viewer

4. Using the short side of your box as a guide, trim a strip of white paper so that it is slightly smaller than the short side of the box. This will ensure that your piece of paper fits into the inside of your box without getting crumpled.

5. Tape your strip of white paper inside the short edge of the box opposite from the side you cut the holes in step 1.



6. Seal this end of the box with tape along all edges. This will help prevent light from leaking into your eclipse viewer.

STEM ACTIVITY Clearinghouse

STAR net

www.clearinghouse.
starnetlibraries.org

Free Additional Resources
(Take a Picture of This Slide!!)

500+ STEAM Activities for Public Libraries

http://clearinghouse.starnetlibraries.org

STAR Net Online Community

https://community.starnetlibraries.org/

Eclipses in Fiction (books, music, art, videos)

https://www.fraknoi.com/wp-content/uploads/2022/11/Resources-Connecting-Eclipses-and-Other-Fields.pdf

#STEMInLib Videos

https://youtube.com/starnetlibraries

NASA's Night Sky Network

https://nightsky.jpl.nasa.gov/

NASA's Solar System Ambassadors

https://solarsystem.nasa.gov/solar-system-ambassadors/events/

Getting Started with SEAL

https://community.starnetlibraries.org/get-started-with-seal/