Yesterday’s Presenters:

Catherine McCarthy, NISE Network
Kristen Weaver, NASA Goddard Space Flight Center, Science Systems and Applications, Inc.
Carolyn Ng, NASA Goddard Space Flight Center, NASA Heliophysics Education Activation Team (HEAT)
MaryKay Severino, ARISA Lab LLC, Eclipse Soundscapes Project
Dennis Schatz, National Science Teaching Association (NSTA), Solar Eclipse Activities for Libraries (SEAL)
Robyn Higdon, Exploratorium, Eclipse Live Streams
Vivian White, Astronomical Society of the Pacific, Night Sky Network, Eclipse Ambassadors

Welcome! As we wait to get started with today’s discussion, please:

Introduce yourself! Type your name, institution, and location into the Chat Box
Questions? Feel free to type your questions into the Chat Box at any time throughout the webinar or use the raise your hand function in the participants list and we’ll unmute your microphone.

Today’s discussion will be recorded and shared on nisenet.org at: nisenet.org/events/online-workshop
Two Upcoming Solar Eclipses!

Saturday
October 14 2023

Annular

Credit: NASA/Bill Dunford

Monday
April 8 2024

Total

Credit: NASA/MSFC/Joseph Matus

North American locations not on the path will still experience a partial solar eclipse!

Partial

Credit: NASA/Bill Ingalls
NISE Network Solar Eclipse Resources

Compilation of Eclipse public engagement resources:

• Hands-on activities
• Maps and images
• Safe viewing
• Cultural connections and more!

nisenet.org/solareclipse
Exploring the Solar System: Big Sun, Small Moon

Exploring the Solar System: Solar Eclipse

Exploring Earth: Bear’s Shadow

Exploring the Solar System: Observe the Sun
Apps with Hands-on Activities

DIY Sun Science
English & Spanish

Activities

Any Day Activities

- Shadows on the Moon
- Color Your Own Aurora
- Sun Cookies
- Big Sun, Small Moon
- Solar Convection
- Hot Equator, Cold Poles
- Solar Flare Flip Book
- Model the Sun and Earth
- Detect Solar Storms

DIY Solar System
English (Spanish coming soon)

Activities

- Spacesuit Selfie
- Mars Rover Control
- Breath of Fresh Air
- Build a Moon Base
- Design a Space Souvenir
- Ice Orbs
- Pack Your Bags

Both available for iPhones & iPads

nisenet.org/diy-solar-system-app

DIY Sun Science available for Android

DIY Solar System for Android

Coming Soon!

nisenet.org/diy-sun-science-app
NEW - Preparing for a Solar Eclipse Presentation

Preparing for a Solar Eclipse

Presentation Overview
- What are solar eclipses
- How to enjoy a solar eclipse safely
- Solar eclipse resources for everyone

Everyone Can Participate in a Solar Eclipse!

nisenet.org/solareclipseslides
GLOBE Eclipse:
Preparing for 2023 & 2024

Kristen Weaver
Deputy Coordinator, GLOBE Observer

NASA’s Goddard Space Flight Center & Science Systems and Applications, Inc
Energy from the Sun warms our planet, and changes in sunlight can also cause changes in temperature, clouds, and wind. What happens when the Sun is blocked by the Moon during an eclipse? How will the eclipse affect these solar-powered processes?

Diagram from the front side of a one-page document outlining the changes that might be observed during a solar eclipse, which is available on the GLOBE Observer Eclipse website.
Using the GLOBE Eclipse tool, volunteer scientists are able to:

- Observe how the eclipse changes atmospheric conditions near you by reporting on clouds and air temperature.

Taking clouds observations using the Clouds tool is always available in the GLOBE Observer app, and is incorporated into the observation prompts for the Eclipse tool. Credit: GLOBE Clouds Team, NASA LaRC

Above: A simple thermometer that can be used to take air temperature measurements. Credit: GLOBE

Right: An example of what the home screen of the GLOBE Observer app will look like when the Eclipse tool is available. Credits: GLOBE
• Report surface conditions (photograph and describe the landscape) that may have an impact on differences in the atmospheric effects in varying locations.

A participant using the GLOBE Observer app Land Cover tool to take photos of the surrounding landscape. Credit: GLOBE

A screenshot from the GLOBE Visualization System, https://vis.globe.gov, showing images of land cover taken around the United States. Credit: GLOBE
• Contribute to a citizen science database used by scientists and students to study the effects of eclipses on the atmosphere.

Left: Dr. Brant Dodson (NASA Langley Research Center) presents his paper comparing the citizen science temperature data at different reported levels of cloud cover, doi.org/10.1175/JAMC-D-18-0297.1

Right: Pages from several of the research reports submitted by students to the GLOBE International Virtual Science Symposia after the 2017, 2019 and 2020 eclipses, observer.globe.gov/eclipses#studentresearch
- Provide comparison data even if not on the path of maximum eclipse

Eclipse shadow location is an estimation.
Eye Safety During an Annular Eclipse

The Sun is never completely blocked by the Moon during an annular solar eclipse. Therefore, during an annular eclipse, it is never safe to look directly at the Sun without specialized eye protection designed for solar viewing.

A solar eclipse watcher in Argentina in December 2020. Credit: Marta Kingsland

A crowd uses handheld solar viewers and solar eclipse glasses to safely view a solar eclipse. Credit: National Park Service

View the eclipse with special solar viewing glasses

Regular sunglasses are not safe to view the eclipse
Indirect viewing methods

If you don’t have eclipse glasses or a handheld solar viewer, you can use an indirect viewing method, which does not involve looking directly at the Sun. For example, a pinhole projector or a colander or other object with circular holes. The GLOBE Eclipse cards also have a place where a hole can be punched to serve as an indirect viewer.

Read more on NASA’s Eclipse Safety page.
Using the GLOBE Eclipse tool

Observer using the GLOBE Eclipse tool during the total eclipse in Argentina on 14 Dec 2020. Credit: Marta Kingsland

The app screen showing the countdown to the next observation, as well as an (optional) paper data sheet. Credit: Pablo Cecchi
Using the App

Example thermometers. Credit: GLOBE

NOTE: A weather app does not count as “other” - you should have a separate physical thermometer.
Learn More

Find more details, including activity guides and extended opportunities for data collection, on the Eclipse page of the GLOBE Observer website, observer.globe.gov/eclipse
The Eclipse Resource Library has a number of useful resources aimed at individual observers, and we will add more as they are developed.

También hay una sección de recursos en español.
Lead a Program

The Eclipse Toolkit for Informal Educators has resources specifically for facilitators, and more are coming.
Download the app from the Apple App Store or Google Play.

Get the latest information as the eclipses approach by following us on social media:

- [facebook.com/TheGLOBEProgram](facebook.com/TheGLOBEProgram)
- [twitter.com/GLOBEProgram](twitter.com/GLOBEProgram)
- [instagram.com/globeprogram](instagram.com/globeprogram)

Contact the GLOBE Observer team with any questions.
Eclipses

Through the Eyes of NASA

Dr. Michael Kirk, NASA HEAT’s Principal Investigator
Carolyn Ng, Informal Education Specialist
Plans for 2023

Albuquerque, NM:  NASA tent at the Balloon Fiesta grounds
NASA agency broadcast
NOAA inter-agency eclipse event
NASA Helio SME engagement support

Continuing to produce eclipse and helio lessons and activities for learners of all ages.

Plans for 2024

Texas (most likely):  Support for Sunspots
NASA Agency Broadcast support
NASA SME engagement Support

Even more helio lessons and activities for learners of all ages!
Recent Discoveries from Eclipses

- Structure of the corona revealed by new types of cameras
- High resolution computer simulations of the Sun tested against images of the eclipse
- Constant temperature of the corona discovered in a 11-year solar cycle (Shadia R. Habbal et al 2021 ApJL 911 L4)

Right: Special filters enable scientists to measure different temperatures in the corona during total solar eclipses, such as this one seen on August 21, 2017. The red light is emitted by charged iron particles at 1.8 million F and the green are those at 3.6 million F. Credit: Miloslav Druckmuller

Eclipse-Focused NASA Science Activation Projects

https://science.nasa.gov/learners/science-activation-teams
NASA Priorities for 2024 Total Solar Eclipse

• Safety
• Broadening Participation
• Science
• Public Engagement
• Science Activation
• Citizen Science
A huge group of sunspots, about the size of Jupiter, appeared on the Sun during a partial solar eclipse over Santa Cruz, California on October 25, 2014. Credit: Astronomy Picture of the Day, Michael Bolte (UCSC)
Safe Indirect Viewing

Build a box pinhole projector
Credit: NASA

Allow light to filter through a colander to project many partial solar eclipse images on the ground. Credit: NASA/Joy Ng
Safe Indirect Viewing

Your back should always be to the Sun when using a pinhole projector. Do NOT look at the Sun through the pinhole!

Figure 2. A 2D paper cut US map for the Saturday, October 14, 2023, annular solar eclipse. Not to scale. See Learner Handout. Credit: NASA HEAT/J. Patrick Haas

https://nasa3d.arc.nasa.gov/detail/usa-eclipse-2023

https://nasa3d.arc.nasa.gov/detail/usa-eclipse-2024
Solar Eclipse

A solar eclipse occurs when the Moon passes between Earth and the Sun, thereby obscuring Earth’s view of the Sun, totally or partially. Such an alignment coincides with a new moon, indicating the Moon is closest to the plane of the Earth’s orbit. In a total eclipse, the disk of the Sun is fully obscured by the Moon. In partial and annular eclipses, only part of the Sun is obscured.

>>> Read More >>>

Mini Lessons

Interactives

Lesson Plans
Map, Flyers, and Posters
Websites

Eclipses
NASA studies solar eclipses on the ground, in our atmosphere, and in space, influencing solar and Earth science.

https://solarsystem.nasa.gov/eclipses/home/

NASA HEAT
Welcome to your go-to place for infusing curated heliophysics resources into your learning space! NASA data, videos, activities, mission plans, and more meet educator background on the heliophysics topics that NASA explores.

https://solarsystem.nasa.gov/heat/home/
Exploring our Sun and its interactions with Earth is possible through innovative NASA missions.
NASA Heliophysics Big Year

The Sun will have a very Big Year from Oct 2023 – Dec 2024!

We want you to bring your joy and curiosity to this opportunity of a lifetime to participate with NASA Heliophysics! Learn more at go.nasa.gov/ HelioBigYear
MONTHLY THEMES

**October 2023:** Annular Eclipse
**November 2023:** Citizen Science
**December 2023:** Mission Fleet
**January 2024:** The Sun Touches Everything
**February 2024:** Fashion
**March 2024:** Experiencing the Sun
**April 2024:** Total Solar Eclipse

**May 2024:** Visual Art
**June 2024:** Performance Art
**July 2024:** Physical Health
**August 2024:** Kids
**September 2024:** Environment/Sustainability
**October 2024:** Solar Cycle/Solar Max
**November 2024:** Bonus Science
**December 2024:** Parker's Perihelion
Resources

Public Annular Eclipse training slides:
https://solarsystem.nasa.gov/resources/2968/annular-solar-eclipse-training/?category=heat

Sign up for the eclipse newsletter:
go.nasa.gov/3oObEDI

My NASA Data / HEAT Formal Education Resources:
https://mynasadata.larc.nasa.gov/phenomenon/solar-eclipse

HEAT-developed Eclipse Resources (continually updated with new materials; e.g., helio-club for out of school time):
https://solarsystem.nasa.gov/heat/all-resources/?order=pub_date+desc&per_page=50&page=0&search=Eclipse&filter_categories%5B0%5D%5B5D%5D=469&fs=&fc=&ft=&dp=&category=469

Eclipse Website for all updates (resources, events, announcements, etc.): https://solarsystem.nasa.gov/eclipses/home/
Science Question:
How does life on Earth, specifically wildlife, respond to solar eclipses?

Recreating a Study from ~ 100 years ago!

Observations on the Behavior of Animals during the Total Solar Eclipse of August 31, 1932

MaryKay Severino

EclipseSoundscapes.org @EclipseSoundscapes @EclipseSoundUDL

Eclipse Soundscapes is supported by NASA award No. 80NSSC21M0008
Previous Studies Demonstrate that Solar Eclipses are Multi Sensory Events

Watch the Moon slowly creep in front of the Sun until it blocks the Sun from view.

Listen to animals, insects and people change their behavior as day suddenly becomes night.

Feel the temperature change as the Sun's warm rays are briefly blocked from reaching the Earth.
Eclipse Soundscapes: Citizen Science Project is supported by NASA award No. 80NSSC21M0008

Invites you to:

- Work Alongside Subject Matter Experts
- Learn about Solar Eclipses
- Collect Sound Data
- Submit Observations
- Analyze Sound Data

Focuses on inclusion:

- Accessibility
- Universal Design for Learning
  Information shared in multiple formats:

Revisits previous eclipse studies:

- "Observations on the Behavior of Animals during the Total Solar Eclipse of August 31, 1932" by Wheeler et al., 1935
- 2017 NPS eclipse recordings & "Listening to the Eclipse," produced by Dr. Megan McKenna of NPS
How to Participate?

Collect & analyze observations and sound data from the October 14, 2023, annular eclipse and the April 8, 2024, total solar eclipse to help us understand the impact of solar eclipses on various U.S. ecosystems.

**OBSERVER**
(Eclipse Day Activity)

During the 2023 annular eclipse or the 2024 total eclipse path, go outside and observe with all of the senses available to you. Then share these observations with the ES team via the ES website!

**DATA COLLECTOR**
(Eclipse Week Activity)

Collect data using an AudioMoth Recorder along or near (70%+) the 2023 annular eclipse path or the 2024 total eclipse path. Then share the data with the ES team by mailing the MicroSD card!

**DATA ANALYST**
(Online Data Activity)

Analyze sound data in 2024 and 2025 alongside scientists on the ES website. (Coming 2024)

**APPRENTICE**
(Online Eclipse Learning)

Learn about solar eclipses via free online learning and earn a certificate of completion.

Eclipse Soundscapes is supported by NASA award No. 80NSSC21M0008
ES Programming Ideas for Libraries, Facilitators, Educators

Guide your community in becoming ES Apprentices!
Utilize Apprentice Training resources to host eclipse learning events. Each person can take the Apprentice Training quiz and earn their own Apprentice certificate afterwards!

Invite Patrons to be ES Observers!
- If you are handing out eclipse glasses, provide them with an Eclipse Soundscapes flyer and invite them to be Observers.
- Meet before and after with your community to talk about and submit observations on the ES website together.

Be an ES Data Collector in 2024!
- Put out AudioMoth on display several weeks before for patrons to look and touch.
- Choose a recording location together.
- Hang up a poster explaining that eclipse soundscapes are being collected and why. Then ask your community/group to write their ideas on what animal & insect changes they think will happen on the bottom of the poster.
- Sign up for Updates to be alerted of next free Data Collection Kit application!

Kit Cost: ~$150

EclipseSoundscapes.org  📚  @EclipseSoundscapes  📚  @EclipseSoundUDL
Participation Roles

The Science

Science Questions

Are animal behaviors significantly impacted by solar eclipses, as measured by changes in animal sounds?

What percentage of a solar eclipse (total, 95%, 85%, etc.) is necessary to produce a detectable change in animal behaviors as measured by changes i?
6 million glasses distributed free through 13,000+ public libraries
https://www.starnetlibraries.org/about/our-projects/solar-eclipse-activities-libraries-seal/
NSTA Solar Eclipse Resource Website

Two Beautiful Eclipses Coming to North America!

An Annular Eclipse in 2023 and a Total Eclipse in 2024

Kick-start your planning for the upcoming eclipse events. Solar Eclipses are exciting astronomical events that can provide a great opportunity for teachers and students to learn about the science of astronomy and explore the beauty of the natural world. Check out the following collection of resources and teaching materials to use in the classroom.

https://www.nsta.org/eclipse
The Great American Annular Eclipse of the Sun

Saturday, October 14, 2023

Annular Eclipses differ from total eclipses in that the moon is too far away or too small to completely cover the Sun. Instead, the moon blocks all but a ring of sunlight, called the annulus. This ring can be seen off the center of the Sun.

As you can see in the figure below, the annulus will appear as a bright ring around the Sun. This is a unique and rare event that can be observed by everyone on Earth with the proper protective eyewear.

A Solar Eclipse Double-Header

October 14, 2023 and April 8, 2024

Many people in the U.S. experienced the annular beauty and educational potential of the total eclipse. On Friday, October 14, 2023, a total eclipse of the Sun will sweep across the U.S., providing an exceptional opportunity to observe and learn about this natural phenomenon.

The event will begin at 7:20 AM EDT and last until 2:50 PM EDT. The path of the total eclipse will stretch from the Pacific Northwest to the Great Lakes region, offering a unique experience for those in its path.

Solar Eclipse Double-Header in October 2023 and April 2024

What School Administrators and Other Education Leaders Need to Know

Many events are planned across the U.S. to commemorate the eclipse. From educational programs to community events, there will be opportunities for everyone to learn and experience the eclipse.

In addition to the eclipse, there will be special activities and programs planned in various locations. These events range from guided tours to workshops and presentations, offering something for everyone interested in the eclipse.

Educator and Administrator Guides

Family/Friends Handouts
Free Web Seminars

Recordings of the web seminars will be available post-event.

Safe Solar Eclipse Viewing Techniques and What School Administrators Need to Know
Thursday, September 14, 2023 • 7:30 PM ET

A Solar Eclipse ‘Double-Header: The Perfect Way to Engage Your Preservice Teachers in Capitalizing on These Teachable Moments
Thursday April 27, 2023 • 7:00 PM ET

An Eclipse ‘Double-Header’ is Coming this School Year!
Thursday August 31, 2023 • 7:00 PM ET

Getting Ready for Two Spectacular Solar Eclipses in North America
October 20, 2022
FOR CHILDREN

FOR TEACHERS
Journal Articles

Science & Children • Elementary
Preparing for the Eclipse: How to safely observe the Sun with young children

Science Scope • Middle School
July/August 2023 • Volume 46 • Issue 6
- Hurrah for Teachable Moments
- Preparing for the Great American Eclipse of 2024
- The 2023 and 2024 Solar Eclipse Double-Header
- Transitioning from Partial to Total Understanding
- Making the Most of the Upcoming Solar Eclipse Double-Header October 14, 2023, and April 8, 2024
- Megamovie 2024: A Project to Eclipse All Others

The Science Teacher • High School
Total Eclipse: The solar eclipse this August is an ideal opportunity to practice three-dimensional science learning
NSTA Collection

A Collection of external links curated by NSTA with additional resources related to solar eclipses.
See what our fellow science friends have to offer.
Future Eclipse Resources from NSTA

1. Fall 2023 issue of NSTA’s K-12 Journals dedicated to the eclipses

2. Sessions at the NSTA Conference in Kansas City (October 26 – 29, 2023)

3. Future NSTA web seminars
Many people in the U.S. experienced the beauty and sense of wonder of the 2017 total solar eclipse—when the Moon crossed in front of the Sun. The sun went dark, and the day turned into night. Now is the time to prepare for the next solar eclipses in North America—a “Double-Header” on Saturday, October 14, 2023 (an annular—or ring of fire—eclipse) and Monday, April 8, 2024 (a total eclipse). Rarely does nature offer us such teachable moments, when our students can experience key scientific concepts while observing a spectacular celestial event first hand.

In 2017, many administrators were unprepared when their science teachers asked to take students outside to view the eclipse. So, for the upcoming eclipses, we’ve prepared this document to give you the background you need to help your teachers make the two eclipses an unforgettable learning experience.
What to Tell Administrators

It is important to inform your school administrators EARLY and OFTEN regarding plans related to the eclipses. Share the NSTA Administrators Guide and emphasize three things:
Eclipses are a Wonderful Learning Experience
Eclipses are Safe to View


Research during the 1999 solar eclipse in the United Kingdom found:

“There were no recorded cases of permanent visual loss.”
Safe Eclipse-Viewing Techniques are Easy to Find and Use
Eclipse Live Streams

Robyn Higdon, Exploratorium
September 12, 2023
Annular Eclipse: October 14, 2023

Live Stream from Ely, NV: Entire 3 hours of eclipse
Only images from telescopes: no commentary, interruptions, or audio
Close-ups (1/4 disc) and full disc in H-Alpha and white light

From Valley of the Gods, UT: Entire 3 hours of eclipse with Live Sonification
Only images from telescopes: no commentary or interruptions
Close-ups (1/4 disc) and full disc in H-Alpha and white light

From Valley of the Gods, UT: One Hour ‘Show’
ENGLISH Educational Program with Educators, NASA scientists, Navajo knowledge holders, and live imagery from the telescopes

From Valley of the Gods, UT: One Hour ‘Show’
SPANISH Educational Program with Educators, NASA scientists, Navajo knowledge holders, and live imagery from the telescopes
When do the streams start?

<table>
<thead>
<tr>
<th></th>
<th>PDT</th>
<th>MDT</th>
<th>CDT</th>
<th>EDT</th>
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<tbody>
<tr>
<td>Telescope Start</td>
<td>8:00 AM</td>
<td>9:00 AM</td>
<td>10:00 AM</td>
<td>11:00 AM</td>
</tr>
<tr>
<td>Program Start</td>
<td>9:00 AM</td>
<td>10:00 AM</td>
<td>11:00 AM</td>
<td>Noon</td>
</tr>
<tr>
<td>Program Ends</td>
<td>10:00 AM</td>
<td>11:00 AM</td>
<td>Noon</td>
<td>1:00 PM</td>
</tr>
<tr>
<td>Telescope Ends</td>
<td>11:00 AM</td>
<td>Noon</td>
<td>1:00 PM</td>
<td>2:00 PM</td>
</tr>
</tbody>
</table>
How to access the streams:

www.exploratorium.edu/eclipse

Total Solar Eclipse App for iOS and Android

Exploratorium’s YouTube Channel
Ideas for Use:

The Telescope Feeds: Use on Museum Screens
- Use as a backdrop for your educators to speak about the eclipse
- Send to screens at admissions or in galleries to create excitement
- Take screen captures and post on social media
- Play on monitors outdoors to give visitors a chance to see close ups

The App: Use it while observing outdoors!
- Watch stunning close-ups of the sun
- Watch annularity in places where it may be partial
- Watch it before/after annularity in your location

The Programs: Stand Alone Programs
- Screen in your theater for a turnkey public program
- Show the Spanish show to increase access
In partnership with the Indigenous Education Institute, we have developed content about the unique way the Navajo (Diné) experience the eclipse.

For generations, Navajo (Diné) people have studied the sky and passed down its stories.

"Navajo worldview is based on concepts and cosmology significantly different from western academic astronomy. Navajo astronomy and related ideologies will much longer prevail than western cosmology. The Navajo way of life embodies a hierarchal ordered universe where everything is interrelated and all the pieces of the universe sustain each other. At the same time, every piece sustains the entire universe, creating a network of relationships and processes that exist for the 5,000-year-old Navajo astronomy. Traditional Navajo astronomy is highly spiritual in accordance with a worldview where everything is connected, living, and sacred."

- Nancy C. Murphy, PhD, Indigenous Education Institute (IEI)

In Navajo (Diné) tradition, the eclipse marks a sacred time.

Solar eclipses are compelling astronomical events that connect us to the Sun and the Moon in fundamental ways. In order to study solar eclipses, both sacred and secular, the Navajo have long observed the impact of the phenomenon as well as the people and places where we experience the eclipses. The Navajo have a rich repertoire of stories that trace the spiritual origins of the planet Earth and its inhabitants, as well as the Sun and Moon. These stories convey the Navajo's understanding of the cosmos and the role of natural events in the universe. The Navajo view the Sun and Moon as spiritual beings that are fundamental to the balance of the natural world. These stories emphasize the interconnectedness of all living things and the importance of respecting the natural world.

- Nancy C. Murphy, PhD, Indigenous Education Institute (IEI)

Traditional Navajo (Diné) knowledge teaches us that eclipses have always been a part of the human experience.

"When an eclipse begins, the Navajo describe it singing and the Sun and Moon Dance. This is the belief that the eclipse is a powerful spiritual event that connects the community to the spiritual world. During an eclipse, the Navajo believe that the Sun and Moon are transformed, and this transformation helps to maintain the balance of the universe. This practice highlights the Navajo's deep respect for the cosmos and the interconnectedness of all living things.

- Nancy C. Murphy, PhD, Indigenous Education Institute (IEI)

"Annular Solar Eclipse"® poster

This educational "Annular Solar Eclipse"® poster provides Navajo knowledge of solar eclipses and features the Diné language and descriptions of eclipse from the Navajo worldview. We invite you to download the beautiful poster.

- Nancy C. Murphy, PhD, Indigenous Education Institute (IEI)
Please download, print, and share our beautiful poster.
Thank You.

Contact: Robyn Higdon  rhigdon@exploratorium.edu
Two Moon Shadows You Won’t Want to Miss

October 14, 2023 & April 8, 2024

Vivian White
Astronomical Society of the Pacific,
Night Sky Network, Eclipse Ambassadors

solarsystem.nasa.gov/eclipses
The Whole US Sees a Partial Eclipse

If it’s clear out...

And if not, don’t worry - we have you covered!

exploratorium.edu/eclipse
Involve Your Community

Plan a Partial Eclipse Party
bit.ly/partialeclipseparty
This is a *Total Eclipse*

ONE NATION UNDER THE SUN
PARTNER  undergraduates and eclipse enthusiasts
DISCOVER  eclipse outreach opportunities together
INSPIRE  your community with awe - *in advance*!

Apply today!

ECLIPSE AMBASSADORS

*eNo eclipse-day commitments

NASA Partner

eclipseambassadors.org

ASTRONOMICAL SOCIETY of the PACIFIC
NISE Network Solar Eclipse Resources

Compilation of Eclipse public engagement resources:

- Hands-on activities
- Maps and images
- Safe viewing
- NASA’s Solar Eclipse Tactile book
- Cultural connections and more!

nisenet.org/solareclipse
Companion Apps with Hands-on Activities

DIY Sun Science
English & Spanish

DIY Solar System
English (Spanish coming soon)

Both available for iPhones & iPads

DIY Sun Science available for Android

DIY Solar System for Android
Coming Soon!

nisenet.org/diy-solar-system-app | nisenet.org/diy-sun-science-app
NEW - Preparing for a Solar Eclipse Presentation

Preparation for a Solar Eclipse

Presentation Overview
- What are solar eclipses
- How to enjoy a solar eclipse safely
- Solar eclipse resources for everyone

Everyone Can Participate in a Solar Eclipse!

nisenet.org/solareclipseslides
Learn more and access the NISE Network’s online digital resources: nisenet.org/browse-topic

Read our monthly newsletter nisenet.org/newsletter

Past Recordings & Future Online Workshops nisenet.org/events-all

Follow NISE Net on social networking nisenet.org/social
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Q&A

Use the raise hand feature or type your question in the chat