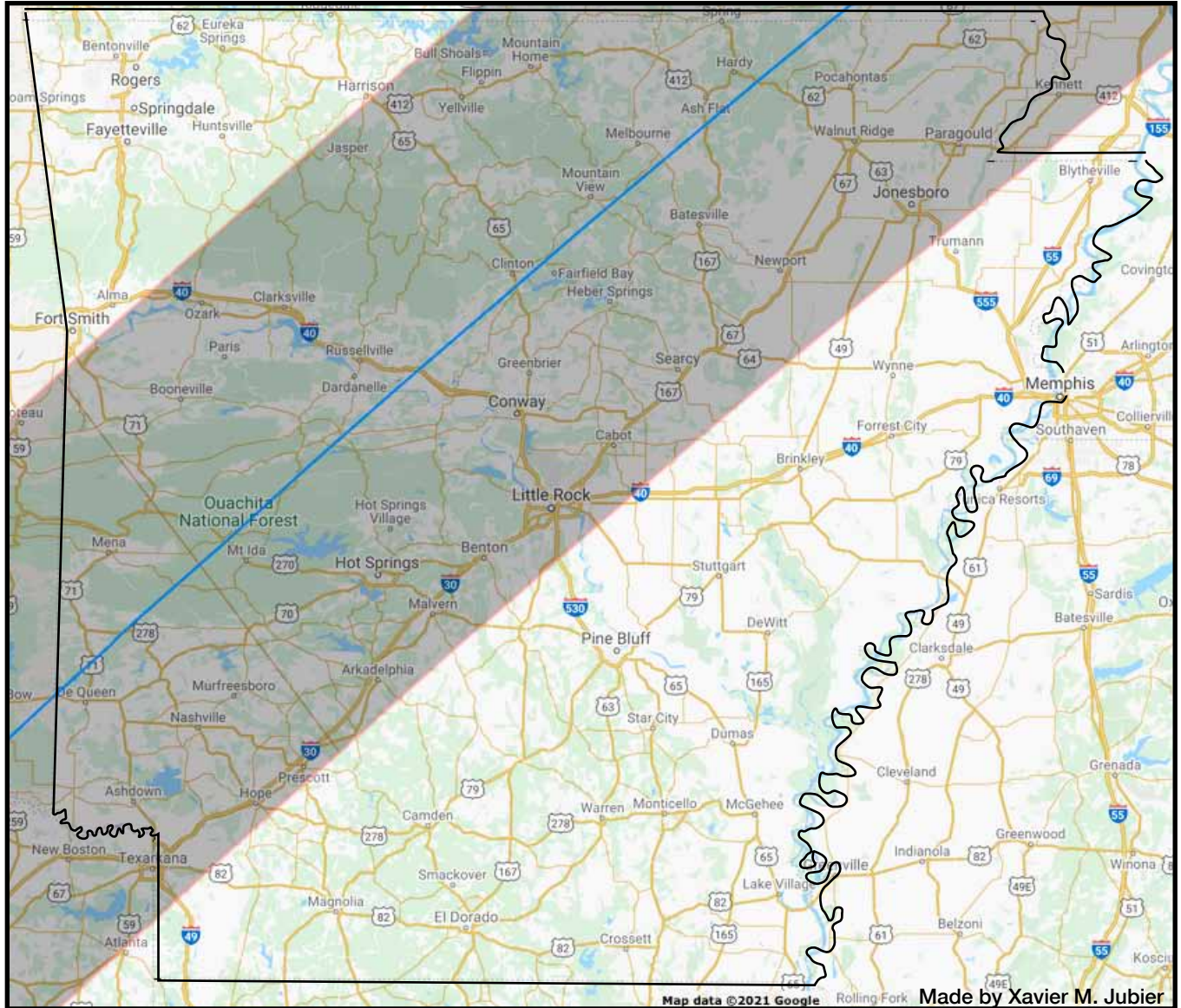




# Total Solar Eclipse

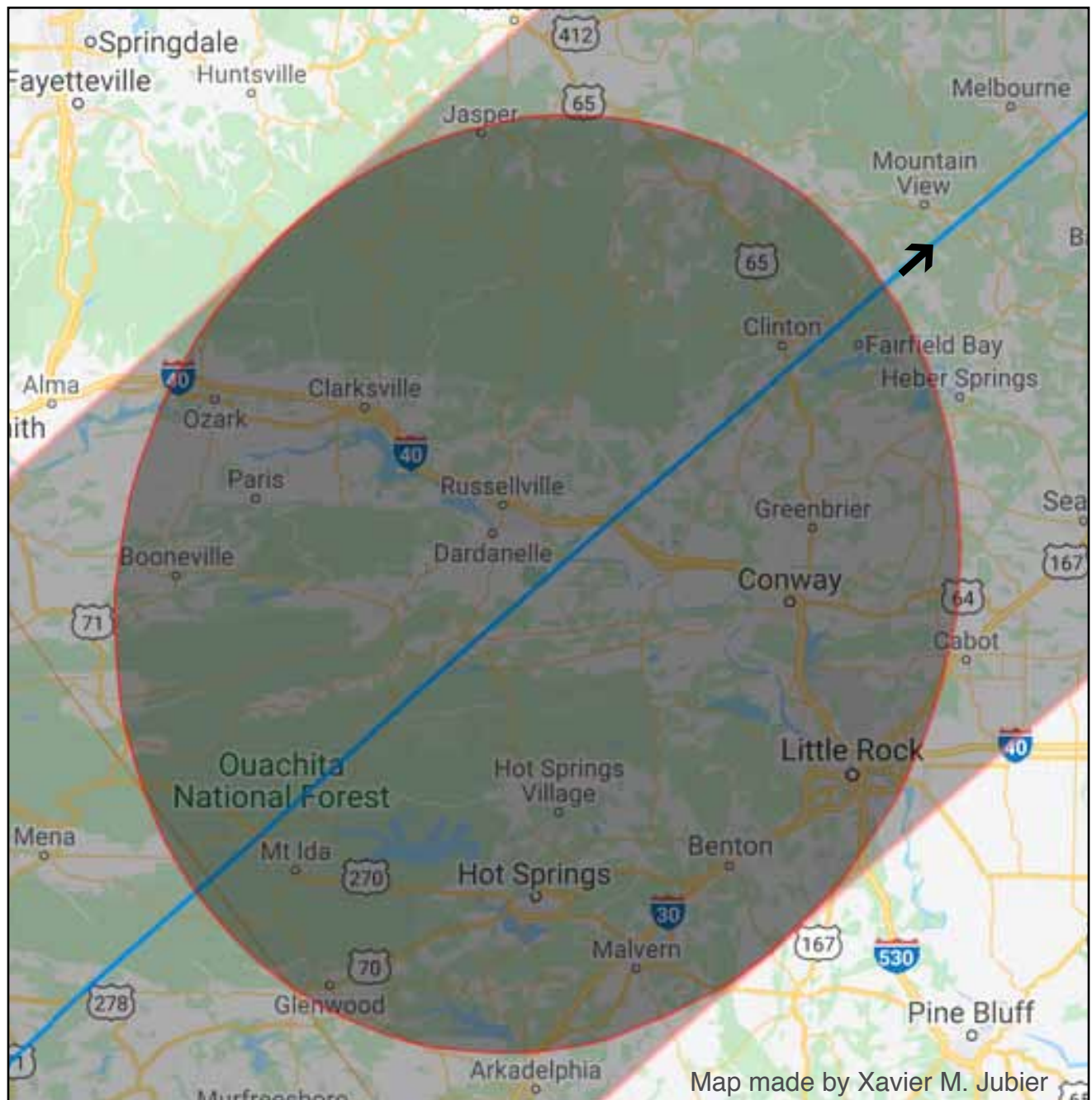
## April 8, 2024



# Arkansas Eclipse Planning Guide



Carl Freyaldenhoven, Central Arkansas Astronomical Society Eclipse Resource Coordinator  
Darcy Howard, Central Arkansas Astronomical Society Eclipse Resource Developer Updated 2023



## Path of the Moon's Shadow over Central Arkansas

The blue centerline shows the time of the greatest eclipse. It is important to know that the longest duration of the total eclipse happens along the centerline. At the centerline, the shadow of the moon takes the longest time to travel across a point. Moving sideways away from the centerline - that means toward the edges - the times decrease because of the shape of the shadow. The edges have only a moment of totality.

[http://xjubier.free.fr/en/site\\_pages/solar\\_eclipses/TSE\\_2024\\_GoogleMapFull.html](http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2024_GoogleMapFull.html)

# Planning for the Total Solar Eclipse of April 8, 2024

The purpose of this document is to provide introductory information for the successful large-scale viewing experience of the upcoming total solar eclipse. Hundreds of visitors will be coming to sites in the path of totality, Arkansans as well as travelers from far away. It will be a much larger event than the traffic of Hot Springs during the race meet or the Razorback games at Little Rock. Some park officials at the lakes predict it will be like “a fishing tournament on steroids.”

Since the eclipse occurs on Monday, April 8, 2024, many tourists will arrive on Saturday, April 6, 2024. These extra days will give your visitors opportunities to enjoy activities in the area.



Expect your facilities to be fully booked. Careful preparation and planning will help reduce the stress on your facilities and personnel.



You will need to designate extra parking areas for those viewers arriving at the Day Use areas on eclipse day. Possibly areas with a clear view of the sky may be marked off and people directed to go there.

Place signs directing the public to parking areas and viewing sites. Extra volunteers can direct traffic and give information. The incoming traffic will be spread out during the morning. The really big traffic jam occurs around 3:30 p.m. with a mass exodus because the eclipse is over.

Any preparation such as mowing the grounds and placement of trash containers can be done the week before. You may want to increase bathroom facilities with portable toilets. Before the 2017 eclipse, other states reported a shortage of portable facilities and had to have portable toilets trucked in from out of state. Reserve them early.

Readily available sources of water or extra bottled water is a good amenity since the partial phase begins around 12:30 p.m. and the totality doesn't happen until an hour and eighteen minutes later.

If visitors stay from the beginning of the first contact through the total and the last partial phase, that time is almost three hours: 12:32 p.m. to 3:11 p.m. Some places may

want to have food trucks scheduled for that day. An overload of trash handling is inevitable so arrange for extra refuse containers placed in strategic locations.

A well-stocked first aid station designated for the day will take care of small medical problems, and a well-thought-out plan for any large medical emergency is essential. Keep in mind roads may be impassable during the departing traffic jam around 3:30 p.m. to 4:30 p.m. or longer.

Arrangements need to be made to TURN OFF the automatic outdoor lighting in the viewing area and campgrounds. Workers should be assigned this duty the first thing Monday morning of April 8, 2024, (the day of the eclipse). Nothing ruins a good eclipse viewing moment more than night watchers and car headlights coming on in response to the total darkness of the eclipse. The sensors of the lights don't know it is the middle of the day!

The times specific to each location for the beginning and end of all phases of the eclipse need to be posted on information boards. These times can be found on the [AR-Eclipse.info](https://AR-Eclipse.info) site. This website will be updated as new predictions become available.

Weeks beforehand it would be beneficial to schedule personnel training explaining why eclipses occur and for learning eclipse terminology such as penumbra, umbra, diamond ring effect, Bailey's Beads, and the sun's corona, etc.

Training should especially include safe eclipse viewing methods. Be sure that the eclipse glasses are certified to the ISO 12312-2 international safety standard. Eye safety is paramount, and indirect viewing devices can easily be constructed to view the partial phases.

Include an EYE SAFETY INFORMATION sheet (see page 9) on your information boards for viewing the partial phases of the solar eclipse.

No eclipse glasses are required during the spectacular short minutes of totality itself, for the moon is blocking the sun.

The Central Arkansas Astronomical Society has [eclipse glasses for sale](#) if you need some. If your facility plans to purchase a bulk order of eclipse glasses for employee use, reliable sources are [American Paper Optics](#) in Bartlett, Tennessee, [Rainbow Symphony](#) in Reseda, California, and [Thousand Oaks Optical](#) in Kingman, Arizona.



# Points for Eclipse Planning Discussions

Here is the REALITY and the CHALLENGE: The Eclipse Will Happen. It's a cycle of nature, whether you are prepared or not. Large numbers of people will come to Arkansas to see the eclipse. When you are prepared your visitors will have a good experience and will return, and spread the word. If not, they won't want to come back. Here is your best chance to get returning visitors!

WHO CAN HELP: the communities and local citizens. Tell them what an eclipse is, and that it will cause the largest influx of visitors they have ever seen. Economic opportunities abound.

**Eclipse Coordinator** – person in charge (with knowledge of Tourism/Government connections)

- Communities might consider forming a 501(c) nonprofit and hiring a coordinator
- Elected officials may be reluctant to lead but will have an interest
- Who is going to be in charge of Fire, Law Enforcement, Traffic Control, EMS, Sanitation, and Maintenance
- How to support the preparation and planning

**Funding** (a REALITY)

- Extra Personnel
- Expenses, this list is only a beginning...
  - Develop an ad campaign
  - Signs and print productions
  - T Shirts and eclipse items
  - Advertise in travel magazines
  - Train park interpreters
- Now is a good time to invest in improvements you've been thinking about

**Safety Plan**

- Traffic safety
- First Aid Stations
- Drinking water
- Plans for medical emergency (hire paramedics or ER nurses)
- Fire, Law Enforcement, EMS (Ambulance or Helicopter) Access  
(Practice drills for emergencies)
- Eye safety: education and available low-cost eclipse glasses
- What is your limiting capacity? (maybe your Fourth of July crowd can be a reference)
- What happens when the facility is full?



### **Traffic** (A big REALITY)

- Traffic director
- What number of cars/people is your capacity?
- Designated parking areas
- Overflow parking
- Signs
- Handicap access
- Admission tickets?
- Shuttle Bus

### **Grounds**

- Extra Trash Bins
- Turn off automatic lights, night watchers
- Extra areas to be mowed
- Signs, message boards
- Contact information for Person in Charge at the viewing site
- On-site announcements of events, location, times, and descriptions
- Cleanup plans at the site the day after

### **Bathroom Facilities** (a REALITY and may become a CHALLENGE)

- Portable toilets
- Plenty of toilet paper (lack of said item can spoil any event)

### **Food Trucks**

Are any permits required: to issue or to get

### **Website and social media announcements** – a year in advance

#### **Media kit** for announcements

- Events planned
- Handouts for eye safety

#### **Volunteers or staff**

- Traffic directions
- Direct parking of cars
- Hand out eye safety sheets
- Tell people where activities and facilities are
- Handicap transport: golf carts, access ramps
- Advise drivers to turn their headlight switch off of automatic, so headlights don't come on during the eclipse (It happens if you have the switch on for the radio)

From *Astronomy Magazine*  
March 2022, p.28

All things being equal, a town of 10,000 is more likely to have event-related problems than a city of 75,000. Small towns with one main road may suffer hours of gridlock. If you opt to travel to such a location, get there early, perhaps even a day or two ahead of the eclipse.

(Remember April 8, 2024 is a Monday, and most people will be free the entire weekend beforehand.)



## Community (can be a SUCCESS)

- If they are skeptical or ask “Why so early?”
  - Share [traffic jam photos](#) from 2017 eclipse
  - Share info about eclipse chasers and all the people who will come
- Motels sell out, consider B&Bs, home rentals, dormitories, campers, and alternate housing
- Landowners who have dry fields may want to set up camping areas
- Economic factors: in Casper WY 2017, visitors spent an average of \$900 per person
- Visitors, whether from far away or local, will need other things to do
- Private development: outdoor dining, entertainment, restaurants
- Hospitality industries will need extra food, supplies, and staff
- Put out the welcome mat and red carpet!

## Eclipse Specific:

- Meteorologist for weather prediction on the day of the eclipse
- Designated science person
  - Information about the exact time of the eclipse at that location
  - Explain terms like First contact, Diamond Ring, etc.
  - Tell visitors what effects to look for: Shadow Bands, tree leaf shadows
  - When it is safe to take off eclipse glasses and put them back on
- Create places for Group Photos and Selfies with signs or banners saying “Total Solar Eclipse, April 8, 2024”
- Souvenir certificate handout: “\_\_\_\_\_ Saw the Total Eclipse of the Sun.” Include the name of your facility/ event and the April 8, 2024 date
- Consider placing a large world map in your visitor center where visitors can stick pins on their hometown locations
- Build pinhole projectors to show the progress of the eclipse
- Make a pinhole sign (see page 10) with your facility name and date – a photo opportunity to photograph the projected images as crescent suns
- In the event of clouds or rain, have large screen TVs to live stream the event

Web sites for reference

<https://eclipse.aas.org/sites/eclipse.aas.org/files/Russo-White-Paper-Community-Eclipse-Planning.pdf>

<https://AR-Eclipse.info>

Prepared by Carl Freyaldenhoven and Darcy Howard, Central Arkansas Astronomical Society



If we can help you in any way feel free to contact us. We are volunteers and are enthusiastic about seeing the eclipse. We hope you are also excited to see it. It is a rare event and an opportunity to witness one of nature's most awesome sights.

Email us if you are in the central Arkansas area and would like a presentation about the eclipse for a general adult audience, for a community planning presentation, or if you have a group of educators who want to learn more about leading their own eclipse day event.

**Carl Freyaldenhoven**, B.S., M.S. Ed.; retired Science Teacher and former  
 American Astronomical Society Teacher Resource Agent  
 Central Arkansas Astronomical Society Eclipse Resource Coordinator  
 NASA Partner Eclipse Ambassador  
[number2frey@yahoo.com](mailto:number2frey@yahoo.com)

**Darcy Howard**, B.S.Ed.; retired Science Illustrator;  
 Guild of Natural Science Illustrators; former NREMTP  
 Central Arkansas Astronomical Society Eclipse Resource Developer  
 NASA Partner Eclipse Ambassador  
[darcy.eclipse.caasastro@gmail.com](mailto:darcy.eclipse.caasastro@gmail.com)

**Central Arkansas Astronomical Society**, “Events” tab  
<https://www.caasastro.org/>



<https://ar-eclipse.info> is a web site of the Arkansas Natural Sky Association, the Central Arkansas Astronomical Society, and the Arkansas Space Grant Consortium. On this web site you will find Community Planning, Times and Places, Observation Tips, History, and information about the ASGC.

If your location is not on the website above, we can calculate the times of the eclipse at your facility's location, such as shown below.

Name of Site	Total Time in Eclipse	Beginning of Partial Phase CDT	Beginning of Totality CDT	End of Totality CDT	End of Partial Phase CDT
Arkansas River Visitor Center	4m 10s	12:33 p.m.	1:49:58 p.m.	1:54:08 p.m.	3:11 p.m.





# How to View a Solar Eclipse Safely **EYE SAFETY**

**A total solar eclipse is about as bright as the full Moon - and just as safe to look at. But the Sun at any other time is dangerously bright.**

Looking directly at the Sun is unsafe **except** during the brief total phase (“totality”) of a **total solar eclipse**, when the Moon entirely blocks the Sun’s bright face, which happens only within the narrow path of totality. .



The only safe way to look directly at the **uneclipsed, partially eclipsed,** or **annularly** eclipsed Sun is through special-purpose solar filters, such as “eclipse glasses” (rated ISO 12312-2) or handheld solar viewers. Homemade filters or ordinary sunglasses, even very dark ones, are not safe for looking at the Sun; they transmit thousands of times too much sunlight.

## Instructions for safe use of solar filters/viewers:

Always inspect your solar filter before use; if scratched, punctured, torn, or otherwise damaged, discard it. Read and follow any instructions printed on or packaged with the filter.

*Always* supervise children using solar filters.

If you normally wear eyeglasses, keep them on. Put your eclipse glasses on over them, or hold your handheld viewer in front of them.

Stand still and cover your eyes with your eclipse glasses or solar viewer before looking up at the bright Sun. After looking at the Sun, turn away and remove your filter — do not remove it while looking at the Sun.

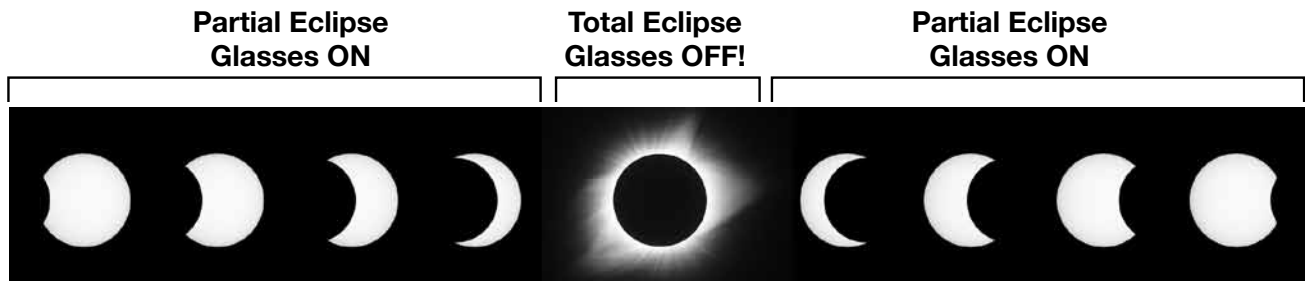
Do *not* look at the uneclipsed, partially eclipsed, or annularly eclipsed Sun through an unfiltered camera, telescope, binoculars, or other optical device.

Similarly, do *not* look at the Sun through a camera, telescope, binoculars, or any other optical device while using your eclipse glasses or handheld solar viewer — the concentrated solar rays could damage the filter and enter your eye(s), causing serious injury.

Different rules apply when viewing or imaging the Sun through camera lenses, binoculars, or telescopes; consult an expert astronomer before using a solar filter with any type of magnifying optics.

If you are inside the path of totality on **April 8, 2024**, remove your solar filter only when the Moon completely covers the Sun’s bright face and it suddenly gets quite dark. Experience totality, then, as soon as the bright Sun begins to reappear, replace your solar viewer to look at the remaining partial phases. Note that this applies only to viewing without optical aid (other than ordinary eyeglasses).

Outside the path of totality, and throughout a partial or annular solar eclipse, you must **always** use a safe solar filter to view the Sun directly.



This safety information has been endorsed by the American Astronomical Society, the American Academy of Ophthalmology, NASA, the American Academy of Optometry, the American Optometric Association, and the National Science Foundation.

<https://eclipse.aas.org/eye-safety>

*Prepared by D. Howard and C. Freyaldenhoven, Central Arkansas Astronomical Society 11-4-2021*



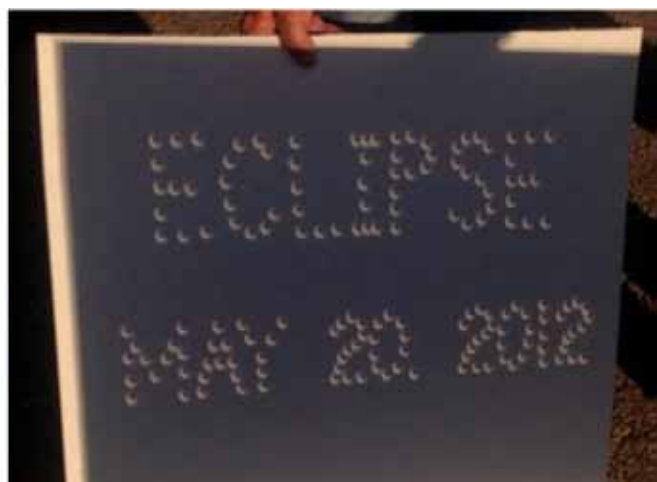
## Set up Photography Opportunities



Making a pinhole projector is a safe way to view the progress of the eclipse. Set up photography stations for your visitors to make pictures of the crescent sun. Include the date and the name of your facility.

Poster board or heavy index card stock works well to make holes in. Print pages 11 and 12 for guides. Tape the paper guide to the poster board and use a punch to make holes. Hold the page in front of another piece of poster board. The shadows and projected images spell out the message in small crescent images of the sun. Remember to turn the flash off or the flash will make the images disappear. Take photos, note the time, and repeat before and after totality.

Many varieties of pinhole projector projects can be found online.



## Eclipse 2024: Getting Your Business Ready

Key steps as an owner, president, or manager responsible for your place of business to consider so that you're prepared for the influx of visitors on/around April 8, 2024:

### Food and Hospitality

- Hospitality providers consider full staffing and perhaps bringing in extra help.
- Food/drink establishments consider increasing food/drink supplies for eclipse weekend to meet higher-than-usual demand. Focus on items that can be stored or frozen to eliminate the possibility of spoilage of unsold items.
- Lodging establishments consider opening reservations for this weekend earlier than the usual 1 year out and setting a 3-night minimum, including the night of Monday, April 8, to help prevent post-eclipse traffic jams. No price gouging — you want these guests to return someday!
- Be aware of, and plan to avoid, potential supply-chain issues with tents/canopies, port-a-potties, entertainment, etc.

### Plan for Deliveries and Appointments

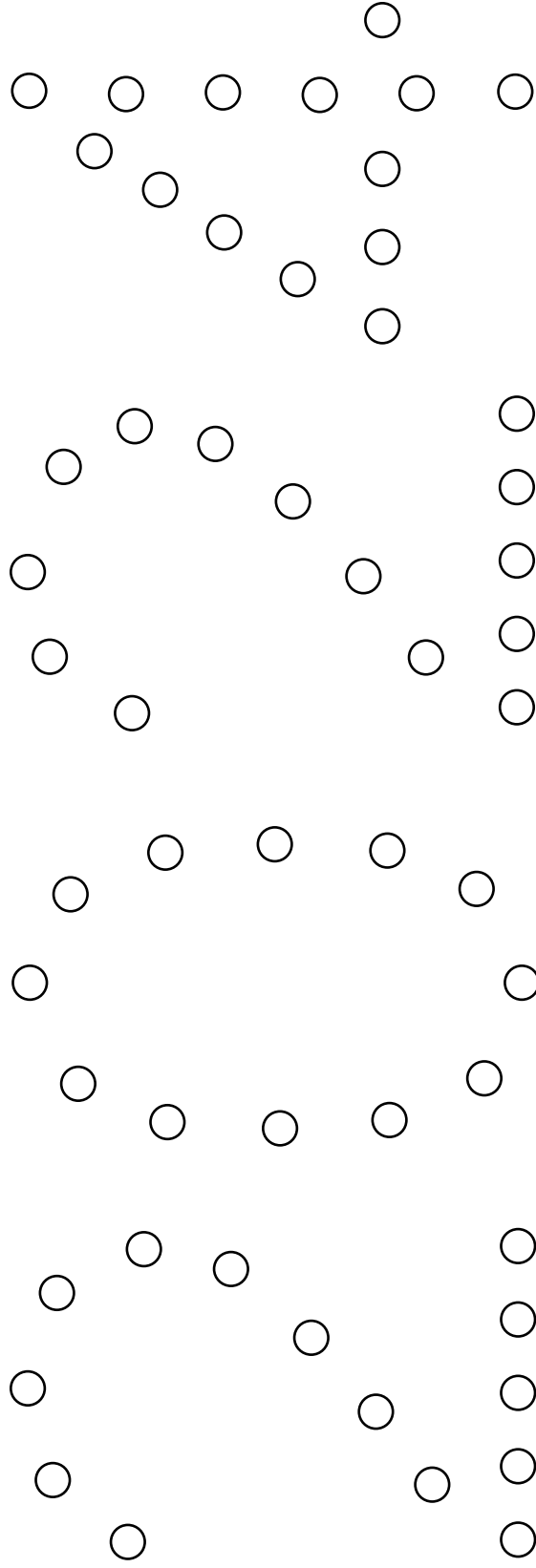
- If you supply gasoline or other flammable products and expect deliveries on April 6, 7, or 8, 2024, rescheduled for before or after those dates to lessen or eliminate the potential hazard posed by higher-than-normal traffic in and through your community.
- If you are a pharmacy or doctor's office encourage prescriptions to be filled before April 6 or after April 8 to avoid traffic congestion and a scarcity of parking spaces.
- Avoid scheduling appointments and meetings on April 8, as most if not all will be cancelled at the last minute due to enthusiasm for the eclipse and/or problems with traffic congestion.
- Schedule deliveries and shipments before April 6 or after April 8 to avoid eclipse-related delays.

### Make This a "Once in a Lifetime" Experience for All

- Consider entertainment to attract patrons during the weekend leading up to the eclipse and to encourage them to stay for at least several hours after the eclipse.
- Create food & drink specials to attract eclipse customers and increase your sales.
- Make eclipse-friendly signage on your property, for example, "Welcome Eclipse Visitors!"
- Allow parking for eclipse guests or make sure you have signage designating that parking is for employees only.
- Provide trash receptacles to eliminate potential littering around your business.
- If possible, assist, sponsor, or volunteer for your chamber's effort to provide fun and educational activities in your community before and after the eclipse.
- Schools: This is a huge educational opportunity for students of all ages. Consider inviting schools outside the path to gather on your campus for the eclipse. Consider a "parent day" to help teachers with the safety of using eclipse glasses for younger classes.
- If you are a library, engage readers in science/astronomy themed activities. Hold star parties or speaker presentations to help educate about the eclipse in your region.

# What to Bring on Eclipse Day

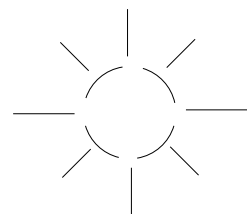
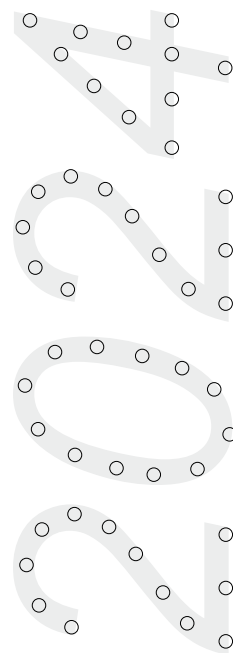
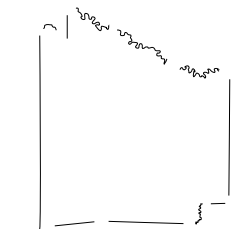
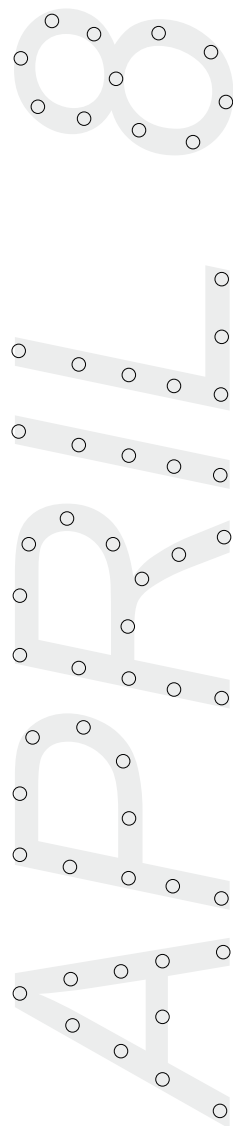
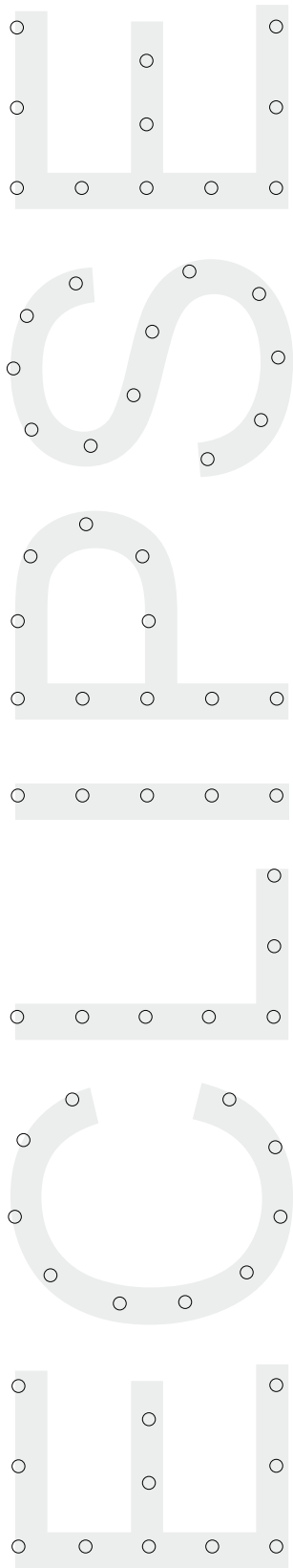
- Eclipse Glasses and Viewers
- Pinhole Projector Projects
- Sunscreen, Hat
- Chair
- Snacks, Drinks and Water  
Be sure to know where  
the restrooms are
- Camera
- Observation Notebook
- Things to keep youngsters occupied
- App for Eclipse Times



Materials needed: a 3/16 hollow punch (available from local hardware stores or online), a mallet, a coat hanger for cleaning dots out of the punch, a magazine to protect your work surface, some tape, poster board, and a copy of this page for the pattern.

Tape your pattern on to the poster board. Make holes where the circles are using the punch and hammer. A good, clean circle will make a better image than a rough cut edge. Be sure to protect your work surface with an old magazine.

Materials needed: a 3/16 hollow punch (available from local hardware stores or online), a mallet, a coat hanger for cleaning dots out of the punch, a magazine to protect your work surface, some tape, poster board, and a copy of this page for the pattern. Tape your pattern on to the poster board. Make holes where the circles are using the punch and hammer. A good, clean circle will make a better image than a rough cut edge. Be sure to protect your work surface with an old magazine.



This page can be enlarged to Poster Size 22" x 18"