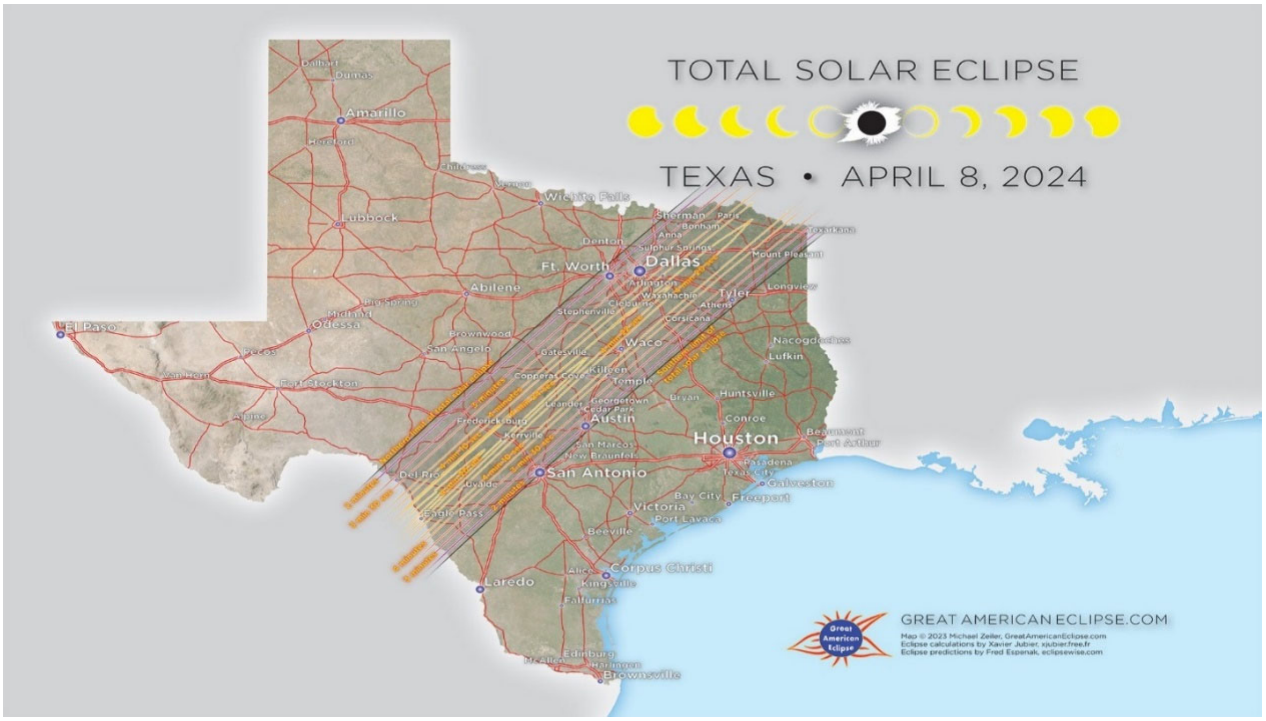
TEXAS STATE
TEXAS SCHOOL SAFETY CENTER

SITUATIONAL AWARENESS BRIEF

TOTAL SOLAR ECLIPSE AND POTENTIAL IMPACTS TO DISTRICTS

OVERVIEW

On Monday, April 8, 2024, South Texas will be the first to observe almost four and a half minutes of total darkness as the 2024 Total Solar Eclipse moves across the United States. Current estimates show that over one million people will visit Texas to view this rare, natural phenomenon. Visitors from all over the United States are expected to arrive the weekend before the eclipse and leave the area on Tuesday and Wednesday (April 9-10, 2024). This temporary increase in population, vehicles, and tourism will produce cascading effects on local resources for many communities in the path of totality and a minimum of 50 miles outside the path. School districts within or near the path of totality should consider all the risks and potential disruption of the educational process, solicit feedback from stakeholders, and make an informed decision.



https://www.greatamericaneclipse.com/eclipse-maps-and-globe/texas-2024-state-map-3fdaw-cl6s7

INTRODUCTION

The solar eclipse in Texas will start to occur on April 8, 2024, around 1:30 pm CST near Del Rio and Eagle Pass. Approximately 12 million Texans will be within the path of totality (https://www.greatamericaneclipse.com/). Viewers across all of Texas will experience some level of totality. the eclipse you will have in your exact location: https://eclipse2024.org/communities/USA/states/Texas/.

What is a solar eclipse? NASA explains a solar eclipse as "the Moon passing between the Sun and Earth, casting a shadow on Earth that either fully or partially blocks the Sun's light in some areas." (https://science.nasa.gov/eclipses/types/). If you live within the path of totality, the moon will completely block the sun, leaving just a ring known as the Ring of Fire. If you live outside the path of totality, you will experience what is known as a partial eclipse, which means that the Sun, Moon, and Earth are not in exact alignment; you will witness a crescent-shaped sun.

SIGNIFICANCE

Total solar eclipses occur on average every 375 years for any location. Texas had its last total solar eclipse in 1900. Aside from the awe-inspiring beauty, an eclipse allows scientists to study the Sun's outer atmosphere, explore the motion and interaction of celestial bodies within our solar system, and understand the life cycles of stars, which helps us understand navigation and timekeeping. There has also been great cultural significance in various societies throughout history. Finally, solar eclipses are captivating and inspire people of all ages to become interested in science and astronomy. Educational initiatives surrounding eclipses help raise awareness and foster a love for science.

Due to the solar eclipses' uniqueness, communities within the path of totality will see a dramatic increase in visitors in the days leading up to the event. In 2017, Wyoming was named the best state to view the total solar eclipse; the state doubled in size in one weekend (The Denver Post). Texas has been dubbed the best state to view the 2024 total eclipse. Many communities across the path of totality have already sold out of hotel rooms. Due to the tremendous influx of visitors across

the state, roadways will be packed and at a standstill before, during, and immediately following the eclipse. All states that experienced the 2017 eclipse reported massive traffic jams after the eclipse was over. Travel times doubled and even tripled in some areas, leaving some motorists looking to refuel at gas stations, but those stations ran out of fuel (Dailymail.com).

WEATHER

One of the reasons Texas will be the number one state to view the eclipse is its climate. April 8th has historically been a day with comfortable weather and clear, dry skies. Texas boasts the best weather forecast along the path in April, an excellent highway system, and abundant accommodations in Dallas, Fort Worth, Austin, and San Antonio. Some cities with long durations of totality include Eagle Pass, Uvalde, Kerrville, Fredericksburg, Llano, Lampasas, Killeen, Waco, Sulphur Springs, and the southeastern suburbs of Dallas.

A remarkable fact is that the entire metropolitan area of Dallas and Fort Worth, a megalopolis of seven million people, is entirely inside the path of totality. For eclipse viewing, mobility is essential, especially in the case of inclement weather. Interstate 10 from Junction to San Antonio in Texas is within the path of totality and offers quick relocation if clouds threaten viewing. The long stretch of Interstate 35 from Austin to Waco to Fort Worth and Dallas will be a crucial route for many eclipse chasers, an ideal traffic corridor if relocation is needed (https://www.greatamericaneclipse.com/texas-2024-eclipse). However, this movement to gain a better vantage point only applies before the eclipse since it will take a mere 17 minutes for the eclipse to move from South to North Texas.

NATURE

Animals and nature change their habits during a solar eclipse. Many animals have been observed carrying out their ‘night-time’ rituals as the eclipse evolves. During the 2017 solar eclipse, many folks observed their hens heading back to the nest to roost, birds starting to flock and fly during the eclipse, and even bears leaving their meal to head back quickly into the woods out of sight. Many daytime-flowering plants temporarily closed their flowers during the darkness of an

eclipse, reopening them when the sunlight returned (https://www.inaturalist.org/observations/7596133). In addition to nature, the eclipse can affect the human body.

SOLAR ECLIPSE SAFETY

Observing a solar eclipse can be an exciting and memorable experience, but it's crucial to prioritize safety. Looking directly at the sun, even during an eclipse, can cause severe eye damage or permanent blindness. Here are some safety tips for observing a solar eclipse:

- **Use Solar Viewing Glasses:**
    - Purchase special-purpose solar filters or solar viewing glasses that meet the ISO 12312-2 international safety standards.
    - Ensure the glasses are not damaged, scratched, or punctured.
- **Solar Viewers and Filters:**
    - Use solar viewers or filters designed for solar observation with telescopes, binoculars, or cameras.
    - Ensure that the filters are securely attached to the front of optical devices.
- **Pinhole Projectors:**
    - Create a pinhole projector, a simple and indirect method of viewing the eclipse.
    - Do not look through the pinhole; instead, project the image onto a surface.
- **Solar Filters for Cameras:**
    - If you plan to photograph the eclipse, use a solar filter designed for cameras to protect your eyes and avoid damaging your equipment.
- **Telescopes and Binoculars:**
    - If using telescopes or binoculars, ensure they are equipped with solar filters for safe solar viewing.
- **Solar Eclipse Glasses for Children:**

    - Ensure that children use solar eclipse glasses properly and supervise them during the observation.
- **Avoid DIY Solutions:**
    - Do not use improvised filters, CDs, DVDs, sunglasses, or any other makeshift solutions, as they do not provide adequate protection.
- **Timing:**
    - Only look directly at the sun during the brief moments of totality and use solar viewing protection before and after totality.
- **Be Mindful of Pets:**
    - Keep pets indoors or ensure they are not looking directly at the sun during the eclipse.
- **Educate Yourself:**
    - Familiarize yourself with the eclipse phases and understand when to observe without protection is safe.

Remember, eye safety is paramount, and proper eye protection is critical when observing a solar eclipse. Always follow recommended safety guidelines and use approved solar viewing methods to enjoy the eclipse safely.

CLOSURES

Baylor Scott & White and Seton hospitals have canceled all elective surgeries in Central Texas. To get the most accurate and up-to-date information about closures or events related to the April 8, 2024, solar eclipse in Texas, check with local authorities, other schools, Chambers of Commerce, emergency managers, and news sources closer to the date. You can visit the official websites or social media pages of Texas observatories, science centers, or astronomy organizations for information on planned events or closures.

Railroad companies will halt all traffic during the eclipse to prevent accidents in the Central Texas area and possibly across the state. Many schools across the state will be closed or have an

altered schedule on the eclipse day. Updates will be provided if we learn of other significant closures.

K-12 IMPACT

In 2017, Kentucky had visitors from 47 different states and 25 countries. Most After Action Reports (AARs) from the solar eclipse mention visitors leaving as soon as the event was over; this led to backups on all roadways, leaving motorists spending up to four times the expected travel time. One stretch of I-25 in Wyoming went from a four-hour commute to an 11-hour commute. Due to the path of totality going through primarily rural areas of Texas, bus routes could see an increase in travel time that would put some students getting home past midnight.

In addition to travel times being impacted, there will be no way to stop people from parking their vehicles and getting out wherever they choose. There is a possibility that campuses could have out-of-town visitors wandering through their property. There will be no way to differentiate honest spectators from bad actors.

Other potential impacts include but are not limited to:

- **Limited and overwhelmed emergency services departments:**
    - Traffic congestion, potential accidents, and medical emergencies will drastically increase the response time of emergency services.
- **Cell phone towers will be overloaded, and internet service will be degraded due to increased use:**
    - Contacting emergency services or others will take additional time.
    - This includes credit card processing. Have some cash available for emergencies. No large bills.
- **Fuel shortages and electric vehicle charging stations:**
    - Expect fuel shortages. Start keeping your fuel tanks full at least two weeks prior and refuel when at ¾ of a tank.

    - Electric vehicle charging stations are limited in rural areas. Expect long wait times and charge to 100% daily starting the week before the eclipse.
- **Limited ability to resupply:**
    - Increased demand and traffic will limit the resupply of grocery stores, convenience stores, water, fuel, and other goods. Supply levels may take up to a week to return to normal levels. Plan accordingly.
    - Do not expect food deliveries or trash pickup on the eclipse day.
- **Parking and camping:**
    - Expect viewers to park anywhere they can. This includes the side of the road, parking lots, stadiums, etc. Unauthorized camping may take place in the same locations.
    - If the grass in unimproved parking areas is tall and dry, fires may occur.
- **Hotels, RV campsites, and other lodging:**
    - Lodging in the path of totality is already 100% booked. If this is the case in your area, you can expect many visitors.

CONCLUSION

Texas will have the number one viewing spot in the United States for the April 8, 2024, total solar eclipse. The weather should be nice, the time of totality will be 4 minutes and 27 seconds (httpswww.timeanddate.com/eclipse/map/2024-april-8), and there are plenty of vast, open spaces to enjoy the viewing. However, you want to make sure you are prepared for this celestial event by planning ahead. We suggest collaborating with your local or county emergency managers immediately if you have not done so. Ensure you are well informed and prepared and weigh the advantages and disadvantages of remaining open on that day. Finally, ensure you have appropriate eyewear for yourself and others while viewing this unique phenomenon and enjoy this rare opportunity.

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