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A MOMENT OF TOTALITY: A SOLAR ECLIPSE ON 4/8

By ISLA BULMER
REPORTER

On April 8, 2024, thousands of people across the world will look up in union and find themselves staring at nothing but the sheer darkness which will slowly blanket a significant part of the northern hemisphere. Those looking upwards will watch as various portions of the sun become covered by an imminent circular object — the moon. Shadows will curl, making leaves seem crescent-shaped, and children and adults alike will peer through pinhole cameras and special glasses to see the eclipse in real time. The rare astronomical event will stretch across North America from Mexico and through the southern and midwestern states, up to the northeastern states and east Canada. The event is a total solar eclipse; although the phenomenon occurs one to five times a year, it only passes over the United States once a decade. During this time, the affected areas will experience total and utter darkness, while other areas nearby will see oddly-shaped shadows amidst the daylight.

A total solar eclipse happens when the Sun, Moon, and Earth all come into alignment. The moment is so rare because it requires a new moon to be in progress at the same time the moon passes through the Sun's ecliptic. The ecliptic, as such, refers to the course the sun takes throughout a year. When the two situations intertwine, the moon passes through the Sun's course, cutting off the Sun's light from Earth while also casting a shadow causing the momentary darkness. The moment happens quickly, and, depending on location, totality — where the moon completely cuts off the Sun's light, leaving only a "ring of fire" to be seen — can last anywhere from a few seconds to four minutes.

Unlike lunar eclipses, where the Earth moves in between the moon and sun, very few areas across the world are exposed to the total solar eclipse. A lunar eclipse can be visible by half of Earth whenever it occurs, whereas the only places that will participate in a solar eclipse's totality are those along the path of the Moon's route. The moment happening is so rare that the same place only experiences it every 375 years. Weather permitting, those the paths of totality will be able to see the Sun's corona, the outermost part of the Sun's atmosphere, appearing as white sparks, which are plasma-charged gasses extending from the Sun's surface. The last total solar eclipse that had totality over parts of the United States was in 2017.

Sophie Hamilton, a junior at Claremont High school, plans on traveling to Ontario, Canada during the eclipse. The town she is staying at will experience 95.6% totality. Although she was previously going primarily to visit family and see colleges in the area, due to such a rare event taking place, Hamilton is staying an extra day to witness it.

"I'm excited to see how dark it will get!" Hamilton said. "I also heard the eclipse is going to last twice as long as the one in 2017."

Granted that most will not be in the path of totality, residents of those in the western states will still be aware of the solar eclipse's effects. Residents can expect the light to dim outside and the Sun to appear distorted, with one third of it going dark. The peak of the eclipse for those in California will be at 11:15 a.m. PDT on that Monday; with any luck, people in third period can take a step outside to view the astronomical event occurring when they would be in class.

Despite California residents not being as affected by the solar eclipse, safety always remains a priority. For onlookers wanting to experience the whole event, as well as those only stepping outside for a couple minutes, solar eclipse glasses are crucial. Despite popular myth, the solar eclipse does not actually produce more or more damaging rays than the sun regularly does. The issue of vision and eye damage only comes into effect when onlookers stare at the sun for longer than usual to witness the event. Even if staring at the Sun does not hurt in the moment, this is only due to the eyes' lack of pain receptors; the aftereffects are likely to kick in hours or even days after the event takes place. Other than the short one to four minute period in which the moon will completely pass over the sun for those in the path of totality, the sun will prove very dangerous to anyone, and for those not wanting to miss out on the phenomenon, solar eclipse glasses are crucial.

Although the majority of readers will not be in the path of totality, the moment in which celestial objects align will be hard to miss. Make sure not to skip out on this remarkable event, and of course, remember your eclipse glasses.

LA'S HISTORY THROUGH TAR

By JULIA LITTLE
REPORTER

Deep in LA is one of the only urban natural history sites found in the city: the La Brea Tar Pits. The La Brea Tar Pits is an active archeological site where the history of climate change and human environmental impact collide.

The tar pits were formed 50,000 years ago by a buildup of dead microorganisms called Diatoms, a type of algae with a glass-like silicate shell. This layer of dead organisms was pushed down by sediment and eventually became crude oil. Earthquakes along the San Andreas Fault caused cracks in the sedimentary layers, allowing asphalt to seep into the surface. These shallow, sticky pools would then become covered by leaves and waters. Unsuspecting animals would step into the waters to take a drink and accidentally become trapped in the asphalt and would eventually be fossilized.

Tens of thousands of years of fossilized history is trapped in the La Brea Tar Pits, which is how scientists know what type of animals have lived in this area. The tar pits are especially unique as fossil sites because of the volume of biological evidence trapped within them. Evidence that shows us how the LA Basin used to be a heavily wooded area populated by many different species of animals like horses, camels, coyotes, mountain lions, bobcats, and especially several different species of megafauna — giant animals. The megafauna of this area include giant sloths, big bears, wooly mammoths, dire wolves, and several species of giant cats!

It's hard not to wonder why the megafauna have disappeared. Who wouldn't want to cuddle with a giant sloth or be chased by a really big bear? It sure sounds better than being stuck on the freeway. The answer: climate change, drought, and humans with their voracious need for fire.

What happened?

Check out the article on our website to find out!

INSIDE THIS ISSUE

art | Lindsay Chung

image courtesy of FreePik

Many thanks to Oliver Kolb for all of the solar eclipse art, including the doodles! The mammoth was drawn by Mayo Ou and all section headings by Kate Mitchell.