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Cultural Observation: Solar Eclipse

I viewed the October 14th, 2023 solar eclipse from the hammock in my backyard. Luckily, the sun and moon’s paths crossed just above the tree line so that I had a clear view from where I lay. I had originally intended to catch the entire eclipsing process—from the point just before the moon began obscuring the sun—so I set an alarm on my phone for 20 minutes prior to maximum coverage. Unfortunately, I underestimated the length of the process and was alerted to the eclipse’s commencement by the dimmed outside light, which I could see from inside my house. I walked outside and was stunned by the change in light because it looked so different than what I expected. I anticipated a dimming similar to the evenings when the sun is setting. Instead, the tone or warmth of the light was the same as it was in broad daylight, simply of diminishing intensity. It felt like much like being in a photograph with extremely contrasting darks and lights, which contributed to a slight feeling of unreality and unease—and this was even as I knew the cause and the mechanism behind the cause. The atmosphere took on such a quality of “unnaturalness”—according to my brain’s interpretation/experience of what is “natural”—that I could easily see how ancient peoples who lacked this knowledge could interpret this event as some kind of ill-omen. Just in sensing that primal apprehension from this monumental experience undoubtedly encountered by many of our human ancestors, I felt profoundly connected to them and gained an especially keen sense of my humanity and my place in the span of its existence.

Disappointingly, by the time I had settled in with my eclipse glasses and a cozy blanket and began my observation, the moon had already covered enough of the sun to leave visible only a crescent-shaped portion. I took some photos with my phone throughout the process and noticed that the lens flare in the photos contained little crescents of light that matched the crescent of sunlight. Additionally, the photos revealed just two long light rays that extended far out from opposite ends of the sun so that the sun in the photos resembled an elongated bow tie. Subsequent photos revealed that, as the moon’s position in front of the sun changed, the direction of the rays’ emanation rotated. This seemed to coincide with the rotation of the crescent of light. Though I had hoped for a total eclipse, I soon realized that I simply was not in a geographic position that would allow perception of a total eclipse. The moon’s arc only allowed it to first obscure the “right” side of the sun, then move to obscure the “bottom” half of the sun before passing it entirely.
Another exciting aspect of my observation is that the sun served as a visual reference point for the moon so that, with the moon in front of the sun, I was able to really experience not just the moon's appearance, but it's position in space. I could, for the first time, visualize the moon "hanging" in space rather than a mere two-dimensional image of it plastered against a sky canvas.
Annular Eclipse Experience

I have always had a strong interest in space and astronomy. My first introduction into the world of space was, like many young kids, the Star Wars (original) trilogy. As I got older my interest in space and movies grew. I tried to discover as many movies as possible that involved space in some way. These movies ranged from the implausible to the plausible, such as Armageddon, Contact, Interstellar, and Close Encounters of the Third Kind. When we read about the Kiowa Tribe’s story about the Seven Sisters becoming the Pleiades, and the rock that saved them become the Devil’s Tower my mind immediately went to Close Encounters! In addition to learning about space my other passion is history. These two passions merged once I went down the rabbit hole of the United States Space Program and devoted many hours to learning about the Mercury (The Right Stuff by Tom Wolfe is still one of my favorite books), Gemini, and Apollo programs. One of my party tricks is naming all 12 men to have walked on the moon, and this list will eventually get longer in 2025 when we, finally, return to the moon with the Artemis missions. The main reason I picked this class during my transfer orientation over the summer was because I saw in the description there was an emphasis on astronomy and astronomical events, like the solar eclipse we witnessed in October.

I was lucky enough to have had some free time on Saturday, October 14th, and was able to attend the Solar Eclipse viewing event on campus. I arrived in my usual parking spot on the east side of campus around 10:30 and when I looked up the moon had already begun to make its way in front of the Sun. I made my way over to Science courtyard and saw that a large group had already gathered to start observing the eclipse. One group had a telescope set up to observe and record the eclipse, they had a livestream going of eclipse, and some people even had built or bought pinhole projection. I sat in the courtyard and observed the eclipse’s progression every 15 minutes or so and took pictures as I did this. It did not even occur to me that I could use these pictures for the moon lab project at the time because I was taking pictures to post on my Instagram story for people to see who may not have known about the eclipse or were unable to view it. When someone asked in class if we could use these pictures for the lab, I was glad that I had the pictures! Before the eclipse reached its maximum coverage, I walked back to my truck to enjoy the peak away from all crowd and all the noise. It was a very peaceful experience being alone in the parking lot observing the eclipse and watching it get dimmer and dimmer around me. Another interesting phenomenon that the eclipse brought was the interesting shadows the eclipse created. In the past when I have seen eclipses, I do not remember ever noticing these shadows. Another thing I noticed while I was driving to campus and on campus was all the people who were unaware of the eclipse going on. It reminded me of the movie Don’t Look Up and our Stargazing book because everyone is so busy and preoccupied in their own world, they forget to take time to look at the sky above them. Another good example of this is from the radio show I listen to every morning on the way to work. The radio host was talking about how he got back to his house after riding his bike at around 11:45 (peak eclipse time) and was wondering why the inside of his house was unusually dark. It was not until later that he realized that the eclipse was the cause of the darkness. I think and hope this assignment will have been a positive experience for the rest of the class, and I am looking forward to experiencing the total solar eclipse in 2024! I have included some pictures to from my experience on the next page.
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Solar Eclipse A&P paper

I decided to go up to campus to watch the eclipse, and I got to meet up with some friends. It was a bit cold outside, but the sky was completely clear with no clouds, so I knew that we would have a great view of the eclipse. I arrived about a half an hour after the eclipse had started, and there were already quite a few people there.

The event had many other ways to interact with the eclipse besides viewing it with glasses. They had a TV playing a video about the eclipse and had several “sun spotters” that used lenses and mirrors to project an image of the eclipse. There were also many ways to use shadows to see the eclipse, including interlacing your fingers, or making hole punches in a card. One woman there showed us her eclipse viewer that looked to be a semicircle of plastic with many holes in it, and within the shadows, the light was in the shape of the sun. She also showed us that we could see the eclipse within trees by looking at the shadows between leaves, which I had never thought to do. We spent lots more time after that, trying to see our own shadows and how our fingers and hair became more pointed because of the eclipse. Similar methods were probably used to recognize the eclipse in times before eclipse glasses were invented and popularized, and I thought it was really cool to see how the eclipse had a visible effect on everything on the earth, even when it wasn’t in totality. I can imagine that through history, even children were able to see these changes in the shadows and it would spark their curiosity with our world.

It took about an hour until it was our maximum view. When the sun was mostly covered (80% for us), you could tell that our surroundings were a bit dimmer, like there had been clouds that passed over the sun. It felt a bit colder too because the light from the sun was less intense and we couldn’t feel it as much. Around that time, my mom and my dad were sending me pictures of their view of the eclipse. My friend’s mom was also watching the eclipse back home in Alburquerque closer to the 100% coverage, and she sent us a picture of their view with the “ring of fire” where the moon crossed almost exactly in front of the center of the sun. The sun and moon always orbit on the same ‘line’ as seen from earth, but during the annular eclipse, the position of the moon overlaps the sun, and this is the only time we really get to see the new moon in the sky, because it is the opposite side that is illuminated by the sun.

We went back inside shortly after our maximum coverage, but the full eclipse time lasted for about 3 hours, which was much longer than I had thought before. It had been at least 6 years since I had last seen an eclipse, and it was only because we took a break out of class to go outside and watch it. Now I am wondering how many years the eclipse was visible from my area, but I had been too busy to go outside and look, or even know it was happening. I wasn’t expecting to really enjoy the eclipse since I was viewing it as just an assignment, but going along with my friends allowed me to feel comfortable enough to explore and discover all these new things, and to get to feel like a child who simply wanted to look up in awe and curiosity about our universe.
Solar Eclipse Observation

During the solar eclipse this year I was at work, so I was not able to experience the whole eclipse from the beginning until the end. However, my boss did give me some time to periodically watch the eclipse progress and then eventually pass. While at work, I had the solar eclipse glasses, so I shared them with my colleagues so we could experience it together as a partial solar eclipse will not happen in the Dallas part of Texas for the next couple of decades.

I first got free time to see the eclipse about an hour before it reached its full coverage in Dallas around 10:52 am. When I first saw it, the Moon was only covering about one-sixth of the Sun. There was not much that I observed at the begging as I did not notice whether there were any changes to the environment or not. My friends at work borrowed my glasses to look at the Sun and when our supervisors saw that we were watching the solar eclipse, they also wanted to look. However, they did not want to use the glasses or were just too impatient to, so they looked at the Sun with their naked eye. I tried to tell them not to and that it was dangerous, but they did not listen. Although, by this point I had to return to work, so I was not able to see the Moon progress fluidly.

The next time I was free to go out was just before the eclipse climaxed around 11:45 am. I was excited to see how much the Moon had traveled and the changes it brought. I remembered that during the last partial eclipse that went over Texas, I saw that the shadows of the trees became crescent shaped, so that was the main phenomenon that I was excited to experience during the eclipse this year. When I went out this time, I was excited to see that the shadows did indeed change. The trees leaves shadows became the crescent shape that I was waiting to see. When I looked at my own shadow, however, it looked more like when two shadows of the same object overlapped. I wondered why only some objects, particularly small ones, developed crescent shaped shadows while larger objects, such as people or cars, formed a blurred shadow? I find this aspect of shadow transformation fascinating as how the shape of the Sun can affect even the littlest things that we normally disregard.

As I watched the eclipse progress to the most coverage it would get in the Dallas area at 11:52 am, I noticed that the Sun was about two-thirds covered. At that time, I really didn’t feel much temperature change. It was cold that morning, and it continued to be cold. At the time the solar eclipse reached its maximum, I didn’t think the temperature changed all that much. However, it was about thirty minutes after the maximum of the eclipse that I felt a larger change in temperature.

As it was lunch break during the time the solar eclipse reached its maximum coverage, I got to spend a lot of that time outside and observe it during the time that I could. As I was eating outside, I could feel the temperature get slightly cooler after 11:55 am, and around 12:20 was when I was consciously aware about how much cooler it got. As the Moon eventually passed the Sun around 1:00 pm, the shadows became what they usually were and the temperature warmed up a bit, but it was not until an hour after the eclipse that I felt the temperature actually start to warm up. Overall, the solar eclipse, as I noticed it, lasted about two full hours at least, and it was a memorable event, just like the last one I witnessed.
Annular eclipse observations.

My personal observations of the annular eclipse this year were brief because of bad timing with my scheduled work shift. However, I was able to see it for a few minutes past the annularity. Before noting my actual observations of the event, I want to talk about my personal experience leading to my viewing of the eclipse. From weeks prior to the eclipse, I mentioned to my friends and coworkers how I needed to make a written observation of the eclipse happening on the 14th of October and how I wasn’t sure if I could see it personally, given my scheduled work shifts for that day. They assured me I would have a few minutes to see it during break or between shifts if the warehouse wasn’t as busy. As they said, my shift ended around 12:20 p.m.; sadly, it was too late to see the annularity, but there was still time for me to see the eclipse in person. So, I rushed to my car to grab the glasses and ran towards one of my friends who was leaving for the day. I had recently learned it was her last day at the warehouse, so I wanted to make sure she had a memory of the eclipse to take with her. Soon after, my other friends came to the parking lot where we were standing, and I began to give them the same safety precautions I was told during class and started passing the glasses around. At this point, seven of us were bundled up in the parking lot, passing the glasses around and sharing the experience when more of our coworkers leaving the warehouse got curious and approached us, so we passed the glasses to them so they could experience the eclipse for a moment.

A few days later, an older woman who also works at the warehouse but was absent that day asked me if I was able to watch the eclipse. She told me how she completely forgot it was happening but noticed how everything had gotten darker outside, which reminded her about it, leading her to grab a pair of eclipse glasses she had at home. Unlike her, I was unable to see this personally, nor could I see the weird shadows everyone was describing the following day of class. The only thing I could see was the end of the eclipse when the moon was left behind by the slightly faster pace of the sun. It almost looked like something had taken a bite out of the sun, reminding me of a crescent moon. In the darkness of the eclipse glasses, that is precisely what I felt I was seeing: the moon in the night sky rather than the sun giving daylight. Another thing I can also note is how cold it felt while we were out there; the sky was clear, and the sun was bright, but the partial covering by the moon made a stereotypically warm day feel many degrees colder. Apart from my brief personal viewing, I have also looked at the NASA broadcast. It is fascinating to see how the sun slowly reaches the moon to the point where they meet, creating the ring of fire, which reminded me of the first picture taken of a black hole or, in a more fantasy-based description, the eye of Sauron. Additionally, my perspective of the eclipse differed from what I saw in the broadcast, as I saw the moon covering the bottom left side of the sun, whereas the end of the broadcast showed the right side being covered. I assume this is due to location differences rather than further movement after the broadcast ended.

My observations are more about my experience in my personal community rather than the celestial bodies, but they are what will keep this eclipse alive in my memory.
Solar Eclipse Observation Report

Michael Breyare

Around 11:00AM, I grabbed my eclipse goggles and prepared to go outside. I was unable to make it to the UTD Observation event, but I was determined to get a good view from home. After obsessively checking the eclipse goggles for any holes or scratches for about 15 minutes, I made my way outside and looked up. This was the first time I had ever seen a solar eclipse, and I couldn’t look away. The moon had just begun to make its way across the sun’s surface, and I couldn’t help but see the sun as a blood orange crescent moon. Worried I would go blind, I ran back inside. I sat in the foyer for another 20 minutes or so and made my way back out for a second viewing. As the moon came closer and closer to the height of the eclipse, I repeated this pattern several times. Finally, around 12:10PM, the moon had reached the center position.

Unfortunately, my home is in Frisco, which is situated further north than the campus, and the moon was slightly below the sun, forming an imperfect eclipse. At first, I was disappointed, but after further viewing, a thought popped into my head. The eclipse, from my perspective, looked almost like an eye. Specifically, with the moon positioned a little lower than the center, like an eye looking down at me. The disappointment had faded, and I had become lost in thought. I kept imagining what it must’ve been like for the first humans to observe a solar eclipse. What would they have thought? What would they have seen? Since I couldn’t get the image of a downward facing eye out of my head, my imagination drove even further. Did any other human in history see an eye? If so, what did they make of it? Were there people or cultures who saw, in the solar eclipse, the Eye of God?

I finally went back inside as the moon began to shift to the left, but I continued to wonder about how ancient humans and civilizations could have seen the solar eclipse as a divine revelation, or an indication of the presence of a divine observer. I tried to picture myself as a caveman, someone in the past who had the same level of rationality as I do, but far less knowledge about the world and the cosmos. Seeing God’s Eye must’ve been life-altering. I would’ve felt reverence, faith, and even fear. What if it isn’t a benevolent God? Just who is watching me? I don’t believe a human seeing God’s Eye in a solar eclipse would make them “unintelligent” or “primitive”. As we have discussed in class this semester, humans have always used the rational tools available to them to make logical sense about natural phenomena through observation. The only difference between a human of today and a human of the past is access to information and knowledge, not intelligence. Thinking about how much the interpretation of natural phenomena could’ve shaped religion and culture is fascinating to me.

For a first-time observation of a solar eclipse, it is safe to say I gained a lot through this experience. Perspective, most importantly. With all the knowledge we have in the world today, just how much do we take for granted? God’s Eye, to us, is nothing more than an explainable natural phenomenon. What about the humans who came before? How did the observation of natural phenomenon shape entire worldviews? Entire cultures? The world as we know it? Mostly, it seems that my observational experience has offered me more questions than answers, but that isn’t necessarily a bad thing. All of us could use some perspective every now and then. Seeing God’s Eye has taught me to be much more appreciative of the natural phenomena in my environment. Although we can easily explain away most phenomena today through scientific inquiry and technological advancement, it is important to remember that those resources were
not always available to the rest of humanity throughout history. It really makes you think. What if a human of the past ate psychedelic mushrooms unknowingly and thought he saw God? What if they saw a shooting star for the first time and thought they saw an alien? What if someone saw a solar eclipse and thought they saw God's Eye staring back?
My day kicked off earlier than usual as I roused myself from slumber to pick up my Jiu Jitsu training partner. Every Saturday morning, I am a part of an invite only training session for pros, though I am not a professional myself, I was invited due to my skill. But, before our routine session, we made a pit stop at Home Depot. Not for tools or home improvements, but for eclipse glasses.

The atmosphere in the gym was filled with impatience, everyone wanted to either start training or look at the sun. But before we dive into the wonders of the sky, we had to warm up our muscles on the mat. Part of our session involves hand fighting - an important element in both Jiu Jitsu and wrestling. For the uninitiated, hand fighting is a strategic battle for control, in which opponents use their hands to steady themselves, push opponents away, and launch attacks. It’s a nuanced dance of fingers, wrists, and strategy.

After the exercises, we participated in live rounds or sparring, practicing with different partners and testing our skills. During breaks, we would rush outside to observe the change of the sun. At one point, the moon had taken a sizable bite out of the sun, giving it the appearance of the iconic Pac-Man. Sharing the glasses I bought, my training partners and I took turns observing, while I grabbed the opportunity to educate a few about the annular solar eclipse.

An annular solar eclipse is a fascinating celestial event that occurs when the Moon passes between Earth and the Sun, but not at the closest distance to our planet, making it appear slightly smaller in the sky. As a result, when they are aligned, the Moon does not completely obscure the sun as it does during a total solar eclipse. Instead, a flaming ring, called an "annulus" (derived from the Latin word for "ring"), remains visible around the moon’s silhouette. This ring of sunlight is sometimes called the “ring of fire” because of its bright, dazzling appearance. The occurrence of an annular eclipse is related to the elliptical nature of the Moon’s orbit around the Earth. As the moon moves along this elliptical path, its apparent size changes from our perspective; When the Moon is near its maximum point or at its furthest distance from the Earth, an annular solar eclipse can occur. Unlike a total solar eclipse, where the sun is completely blocked by the moon, the annular solar eclipse highlights the bright disk of the sun against the relatively dark disk of the moon. Indirect methods can also be used to see the eclipse. One good example is pinhole projectors are essential for safe viewing. Pinhole projectors can be a small hole in a paper reflecting the sun’s light, a cracker, or even a sieve.

After my workout, drenched in sweat, I returned home and after a refreshing shower, I calmed down in a moment of spiritual reflection. I offered salatul kusoof, the eclipse prayer, a special Muslim prayer performed during solar and lunar eclipses. It is a prayer that not only seeks God’s mercy but is also a powerful reminder of the greatness and power of the Creator. That day was a combination of the physical training of Jiu Jitsu and the vast and humbling experience of witnessing the wonders of the universe. From dueling on the carpet to watching the cosmic event in the sky, it was a Saturday to remember. It seems that the universe has a unique way of mixing terrestrial and celestial bodies and I’m so grateful to have been there to witness it.
“Creative Cultural Perspective” of the Annular Solar Eclipse

My once-in-most-lifetimes event did happen. On Saturday, October 14, 2023, behind some pitch-black HD eclipse glasses, I viewed total blackness except for the toned-down image of the sun. I was able to look directly into the fiery sun and watch the Annular Solar Eclipse from start to finish as the moon moved directly between the Earth and the sun and across the front of the sun from our view. Since I had time to gear up for this big event, I was prepared with a lens filter for my cell phone which was developed by a real Hubble Space Telescope Astronomer, Dr. Doug Duncan, and after downloading an eclipse app to my iPhone, I was able to take pictures of the solar eclipse through the filter while it happened (pictures on next page). One of the aspects of this eclipse that made an impression on me was the first intrusion of the moon over the face of the sun. Watching it move across was good, but the next point where I was really impressed was when the moon finally hit its highest coverage point that I would get to see and masked over about 90% of the sun. It was exciting to experience the colliding paths of the enormously fierce sun and the calming luminous moon, which had remained hidden that day until the eclipse. – This was a show to be seen.

For this Annular Solar Eclipse, I was back home at my parent’s house in Santa Fe, Texas which is south of Houston. The sun rose that day at 7:21 a.m. at 99 degrees East, and the moon rose that day at 7:12 a.m. at 98 degrees East. The sun set at 6:51 p.m. at 261 degrees West, and the moon set at 6:55 p.m. at 259 degrees West (timeanddate.com). The times, locations and paths were almost the same and where they finally crossed and claimed solar eclipse status which started from my view at around 10:30 a.m., was at the centermost part of the eclipse around 12:00 p.m. and ended around 1:30 p.m. as the moon in its first lunar phase of new moon became invisible again – not visible before the eclipse and not visible after.

Getting to experience these massive celestial spheres all in alignment was incredible. The greatest entities that affect our Earth and everything on it were putting on a show for me and everyone watching. I wanted to see it all. It was so impactful, and I felt so short on time. Not only was I trying to take pictures in the few minutes while it was at its fullest coverage, but I was also trying to see it through my solar-ready glasses, and I wanted to take those off to look around at how dim everything outside around me was as well. I did immediately regret not driving to a point on the path of 100% coverage and get to see the full “ring of fire” that day, but I was lucky to see what I did with clear skies even with a broken ring-of-fire. I am glad to go to The University of Texas at Dallas where I’ve learned about the sun and the moon, could have experienced this event with friends, and will get to be on the direct full-coverage path of the upcoming Total Eclipse on April 8, 2024.
Annular Solar Eclipse Photos
Unbelievable as it sounds, eclipses, both solar and lunar, are very rare to me. Throughout 20 years of my life, I have only witnessed 2 solar and 1 lunar eclipses. The first solar eclipse only lasted for a few minutes and during my classes too. When I was finally able to see, I could only see the end of it. The lunar eclipse was when my mom called me out of my room and pointed at the moon for me. It was a large beautiful red moon, one I have never seen before. Unfortunately, when mother called me out, the eclipse process was already at its peak and was in the process of leaving the alignment. However, this time, I was lucky enough to witness an annular solar eclipse from start to finish, and it was amazingly cool.

The annular solar eclipse started at 9:30 in the morning with more and more people coming to the empty space to witness the event. It was my first time wearing the special glass for solar eclipse too! It looks just like a 3D movie glass, but can only be used to see the sun; otherwise it just pitches black. There was nothing particular happened at first. The moon moved very slowly in my opinion; almost 1 hour and half later and it only covered 2/6 of the sun.

Everyone was very excited though. They were taking pictures, and various equipments were being set up in order to record the phenomenon, both modern and ancient technology. By the time the moon was able to cover almost half of the sun, one of the most amazing things I ever saw happened; the shadows of the trees’ branches and leaves also had crescents of their own! And the more the moon covered the sun, the more vibrated the reflected crescent shadows were!

Observing the eclipse for a while, I asked one of the doctors stationed at the event about the necessity of the special glasses and what would happen if we just looked straight at the sun without it? She told me that our eyes would get hurt since the sun is too bright to be looked at directly. Curious, I took the challenge and took off my glasses, trying to look at the sun; yet, true to her words, it was too bright for me to even open my eyes, less see anything. This prompted a question in me, “How much or long did scientists or astrologists need to observe and experience in order to know that we need this type of glasses made of this material in order to witness the eclipse?” and “How do they know that an eclipse happens anyway when it is too bright to see anything?” There is also curiosity about how they apply the use of regular telescopes to turn it into equipment to look at the moon and stars. It was then that I realized how incredible our ancestors are. We tend to think that people in the old time must be stupid with simple thinking and elementary lessons, all the equipment built in the old time must be simple, or the calculation for the weather, the star, sun and moon must be so basic that we can easily replicate the formula with provided evidence. However, the reality is that it is very complicated to do so even with the provided evidence. The calculations take special trained skills and the lessons are quite complicated that the most basic college class might equal a master class in comparison.

Furthermore, I also thought about how ‘strong’ the moon was. From ancient time to modern age, there are many countries that apply muscular characteristics to the Sun, while the Moon was regarded in a feminine way. In China, the sun is the symbol of the emperor, shining its benevolent love and wisdom toward the citizens, while the empress was taken as the Moon, full of silent kindness and gentle beauty. Greek and Roman mythology has Apollo, the Sun God and the Norse has Sol. Yet, despite the common assumptions, there are many other countries that regard the Sun as a woman while the Moon as a man. We have Amaterasu, the Sun Goddess and Tsukuyomi, the Moon God in Japanese mythology; Re‘, the Sun Goddess and Khonos, the Moon God in Egyptian myth. There are countries that just take the Sun and Moon for what they simply are too; Vietnam is one of them. However, in my own opinion, when looking at the annular solar eclipse, I thought that I agreed with the Japanese and the Egyptian. Even though the Moon receives its light from the Sun and might be view as either gently weak or feminine in many ways, at the moment it covered up the Sun, even not completely, to me that was the show of its own strength right there, that it is also strong enough to cover up the brightest star in the Milky Way.
Annular Eclipse Observation

In the annular eclipse, I get to see the new moon phase pass over the sun. Luckily, the event took place before noon. University of Texas at Dallas had an event going on for the observation, but the drive would be too distant, and I did not want to compete with other students or spectators for parking. With the special film glasses during our Wednesday course, I can just view the eclipse at a nearby school. For the event, I did not expect a cold draft to appear which may have some influence from the moon blocking some of the sunlight. I just wore some shorts and a T-shirt and drove to Gaston Middle School with my father so we could make the viewing a family event. The drive took only a few minutes and we started to observe the eclipse roughly an hour before noon. Every five to ten minutes, I would wear my glasses to see the current phase of the moon. From eleven to eleven-thirty, the moon from my angle appeared in the upper right corner which would have been the north-west. In addition, we had a homemade box pinhole projector to see if the moon influences the sunlight. However, our box did not work since we may have needed to use a piece of paper to show any alterations of the moon and sun. Supposedly the moon would cause the sunlight to cast crescent shadows but did not see any. This may have been due to being in an open field and not many trees being nearby. Roughly around eleven-thirty, My mother was wondering where we were and wanted to join us for the event. My dad and I ended up having to rush home and tell my mother to prepare while we were coming because within the next fifteen minutes, the climax of the event was going to happen. The moon would appear roughly in the center of the sun making a ring of fire look. Once we got back to view the school to view the eclipse again, my mother had some ideas on alternative ways to see if she could view the event without glasses. I had to make sure she does not take these measures since scientists recommend only using the glasses to observe the event and any other alternative means could cause eye damage. Towards the end of the eclipse, the moon started to phase down to what looks like the bottom left of the sun but moved southeast. During the whole event, we tried to take pictures, but proven difficult since we did not have the equipment and only the glasses. My father’s friend in New Mexico also observed the event in his property and had his own telescope to get a proper viewing of the annular eclipse. He sent higher quality photographs to see if what he was seeing was more aligned with ours. After the eclipse was over, the sunlight started to appear a little brighter, but I did not notice too much since my eyes were tired from gazing at the scene for lengthy periods of time. After the event, my mother and I talked to some of her friends on the phone since they tried to view the eclipse as well. They went to Best Buy to buy binoculars that can be used to view the eclipse and immediately return them to get their money back. In comparison to my viewing, no one was at the school where we viewed the eclipse despite the vast open field that could fit hundreds of people. However, while driving on the way home, some people were outside sitting on their lawns with their own glasses and one individual even had his own telescope to view the eclipse. Overall, the event was a family bonding adventure to observing the mysteries of the universe and pondering how would ancient scholars and scientists view such an event without having the proper eye protection to prevent blindness.
Partial Annular Eclipse Observation

On October 14th, 2023, there was a partial annular eclipse in Dallas. In both a total and annular eclipse, the moon comes in between the sun and the earth. However, in an annular eclipse the moon is farthest from earth compared to other points of its orbit, so the shadow does not cover the sun entirely. Instead, when looked at with eclipse glasses, a full annular eclipse appears as a black circle outlined by a ring. In Lunar eclipses, the earth comes in between the moon and the sun and casts a shadow on the moon. These usually occur three times a year, but only observable by whichever side of the Earth is currently experiencing night.

Both total and annular eclipses occur somewhere in the world at least once every 1 or 2 years. However, each eclipse is only visible in certain parts of the world, which makes them rarer. I think the last solar eclipse was maybe 4-5 years ago, I remember that it happened while I was in high school. Unfortunately we had to view it online rather than outside, which made me look forward to seeing one in real life.

Since the eclipse was going to reach its maximum at 11:52 am in Dallas, I went outside at 11:30 am. Luckily, there were no clouds in the sky. I was surprised because everything appeared to be normal, although it may have been slightly dimmer. Seeing eclipse pictures online made me expect something more dramatic, and I had never seen an eclipse before. What I didn’t know is that the pictures I saw online were what I would see with the glasses on. But I realized this when I put the glasses on and saw that the sun appeared to be a crescent shape. Over the next half an hour, the sun became more obscured. I found myself wondering how people in the ancient times were able to detect eclipses, total eclipses are obvious as it becomes dark for a few minutes but annular ones are harder to detect. If I hadn’t been expecting an eclipse that day, it would have been easy to miss. However, unlike observing the sun, there is also another aspect of eclipses that is harder to miss. The pinhole effect causes sunlight, when passing through a small hole, to appear on the other side as a crescent shape. I would have missed this, but lucky my dad told me about this. Unfortunately I was not at home at the time of the eclipse, so I was not able to share my eclipse glasses with my dad and younger siblings. However, they were able to go outside and make their own observations about the eclipse even though they may have not seen it directly.

In conclusion, I am glad I had the opportunity to see the partial annular eclipse this past week, and I learned a lot about why eclipses happen and what unique features they
have. I am looking forward to seeing the total eclipse next year, as it will be my first time seeing one of those as well.
My Annular Solar Eclipse Experience: Creative Cultural Perspective Essay

To preface, I had not seen the solar eclipse in person, though I had initially intended to, though this in itself was a learning experience for me. Although I had intended to see it, I had been scared by the minute, but still present, risk of retinal damage from the sun’s rays post-eclipse via a small gap in my eclipse glasses. Furthermore, though I am not particularly superstitious, there is a conception amongst Indian Hindus, and much of my family, of the eclipse as an inauspicious time, so it is possible that the idea of in the back of my head might have, in conjunction with my safety concerns, pushed me to not watch it in person. This made me realize that even if I am genuinely interested in observing exciting scientific phenomena or objects, I am very easily dissuaded by otherwise relatively minute or unlikely inconveniences, so for future opportunities I am now much more willing to soldier through any small grievances I might have to experience a new scientific phenomenon that I otherwise wouldn’t get the chance to.

Regarding what I observed of the solar eclipse itself, I had seen NASA SpaceFlight’s recorded livestream of the solar eclipse, which was 2 hours and 42 minutes (it was not officially affiliated with NASA, but it was longer than the official NASA livestream), and started with a partial eclipse, so I couldn’t see the moment at which the moon first started to “cover” the sun. I had for some reason expected the moon to move vertically across the sun, and thus was surprised when it moved as it did, but after thinking about it I had remembered that both the sun and the moon, from our stationary perspective, appear to move diagonally across the sky so that then made sense. One thing that had slightly irked me was that when the moon had completely covered the sun, it was slightly off-set from the center, which was a little distracting as I had momentarily perceived it as being a “flaw” in how aesthetically pleasing it otherwise could have been, but I had to remind myself to focus on the larger phenomenae at work. If I focused on a small distraction, I would miss out on the larger picture, and someone easily distracted like me is especially susceptible to that, so this served as a reminder to not nitpick and just enjoy a scientific observational experience for what it is.

The totality, the point at which the moon completely covered the sun, was one of the highlights of my viewing experience, as the moon completely blocking off the sun created the image of the ring of fire, a perception of a loop of light being suspended in the sky, which was something very unique as whenever we look at the sky, whether during night or day, we only see circular objects, and thus this was out of place and all the more intriguing for it. Furthermore, one of the most interesting things was how as the eclipse approached totality, the sky would gradually darken until it became totality at which point the sky was about as dark as it normally would be during dawn or dusk, and after totality, when the moon started moving away from covering the sun, the sky started to brighten again, going to its normal midday brightness. This was fascinating to me because the brightness of the sky changing from light to dark and back to light again, something that otherwise would take about 12 hours to notably change from light to dark to light, took place within a mere fraction of that, in about 2-3 hours. For a moment, however, though I was watching a recording from home, and the totality only lasted a moment, I felt a small twinge of uneasiness, as though it was beautiful there was also something slightly unnatural about it, and thus a sense of eeriness, though that only lasted a few seconds, and was nowhere near enough to take away from the overall enjoyment of the event. It did, however, make me think about how the very first conscious humans who had just started to consciously perceive and try to understand nature must have felt not knowing what was happening, if it was dangerous, or if the world even would go back to normal afterwards.

Besides the interesting questions seeing the eclipse livestream had raised and realizations it had elucidated, it was a very stirring and interesting natural event to see, as I had only seen diagrams and stills of it until this point, never a progression of it from partial eclipse to totality to a partial eclipse again. If a simple livestream could be this wondrous and awe-inspiring, I can only imagine the thrill and elation I
would have gotten from seeing the real deal in person. Furthermore, with what I’ve learnt in this class regarding viewing an eclipse, I think that I am at least a little more prepared than I was before to view one in real life next time.
Wali Khan Mohmand

10/25/2023
PHIL 3328
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Kusūf

The Islamic term for a solar eclipse is ‘Kusūf,’ etymologically translating to ‘Eclipsing’ (in a literal sense) or ‘Obfuscation.’ Much of the Islamic perspective on solar eclipses, which of course in turn governs the manner by which I experience the eclipse, must be understood in light of the historical context of the early Islamic period, especially regarding the traditional pagan customs that found either outright rejection (as was the case with, for example, idol worship) or redress under an Islamicized cloak (best demonstrated in the rites of pilgrimage during the Ḥajj).

The supernatural beliefs surrounding eclipses in the Islamic tradition fall under the former category, wherein eclipses are viewed opposite to how the pagan Arabs had perceived them beforehand. Traditionally, in the pre-Islamic (Jahiliyyah) era, eclipses were seen as a time of great misfortune, usually believed to follow the death of an important figure. Hadith literature across varying denomination seems to support this; in some transmissions, the Arabs ascribed it to the death of a son of the Prophet Muhammad ﷺ. These fragments of scripture assert that the death of Idrīs, the aforementioned son, was followed soon after by a solar eclipse1 on the same day. This seemingly reinforced the notion that eclipses were indicative of times of misfortune and loss, and very well may have persisted, had it not been strongly contradicted by the Prophet ﷺ.

Those accounts that refer to this occasion describe the reaction of the Prophet ﷺ to this rumor of the town, wherein he not only negates the idea that eclipses have any sort of supernatural meaning, but that they are nothing more than “signs of God,”2 and that their observation ought to be accompanied by the establishment of an optional prayer3. Such transmissions are also accompanied by the injunction to free captives, or to give alms to the poorer members of the community. As such, in the Islamic view, eclipses are not only not seen as bad omens, but are rather auspicious occasions, bringing with them a further opportunity to do good and draw nearer to one’s God by way of remembrance and service. One narration advises the listeners to be wary of their actions and not excessively indulge in the common distractions of life, ending with the Prophet’s ﷺ chilling conclusion: “O followers of Muhammad! By Allah, if you knew that which I know you would laugh little and weep much.”4

My eclipse experience was informed by all that which is above. While fortunately there are no slaves at my disposal that I should have the chance to free them, I joined a few friends and we offered the optional prayer, and later made donations to organizations organizing humanitarian aid for those afflicted by earthquakes in Afghanistan, as well as to those attempting to reach both the martyred civilians and survivors of Palestine.

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1 Sahih al-Bukhari 1043
2 A verbiage that is extremely common in the Qur’an, calling the reader to ponder upon the characteristics and origins of naturalistic phenomena, and to realize their magnificence as a sign of God’s truth. See, for example, Qur. 13:3
3 Sahih al-Bukhari 1041
4 Sahih al-Bukhari 1044 - A motivic reminder that the idle pleasures of life, such as the mindless amassing of wealth or power, is a deception. To be noted that the translation of this Hadith is often poorly done due to the density and complexity of its phrasing.
The day of the solar eclipse was particularly cold. I remember waking up to a freezing cold room (turning on the heater had set off the fire alarm the day before) and getting ready to do my sunrise observations. When it came time for the Eclipse, I decided to take a walk around campus and find a good place to view it. There were people pretty much everywhere outside. Some groups had brought their own glasses and there was of course the UTeach group at the sciences building. I stayed for a little while, but I found it more enjoyable walking around and looking at everything. At the sciences building I learned you could make a pinhole with the UTD woosh to see a projection of the eclipse onto the ground. That was super cool, and encouraged me to play with shadows, so I went around campus looking for nice patterns in the trees. My favorite was this one I took outside of Green center:

All the wavy shadows together formed a kind of mountain mosaic which was very unexpected! Wandering around was also nice because I got to run into people. There were a lot of people not associated with the University but also people I knew. Bev, who works for the Comet Cupboard, was outside waiting for a ride and so armed with my new woosh-based eclipse observation technique, I got to show her all the cool shadows. Overall, the eclipse made for a very relaxing day. I got to drift in and out of doors and just look at things. I didn’t observe the whole time as I alternated between class work and the event, so it ended up being a fun way to take breaks and get a breath of fresh air.
October 14 Solar Eclipse: A Step towards my Childhood Dream

On December 21, 2010, the Earth cast its umbral shadow on the entire face of the Moon on the Winter Solstice, the darkest night of the year. On that night, I was allowed to stay up past my bedtime to see the peak of the eclipse at 2AM, and we even used my amateur telescope that I had gotten for Christmas the previous year to take pictures of the Moon as it was blotted out and then replaced with a beautiful blood red. My young self was so happy, and I even brought pictures of it to my school the next day for our 2nd grade Christmas party (the pictures were used as bookmarks by my teacher whenever she would read to us the for the rest of the year). It was one of the happiest days of my life, but even at that age, happiness and joy are quite fleeting as you need your next dopamine fix. My attitude towards that event changed from “the coolest thing I’ve ever seen” to “One down, one to go,” because I still had yet to see the Lunar Eclipse’s far more dangerous and difficult-to-observe sibling, the Solar Eclipse.

However, things changed. My desire to be an astronaut died when I learned about the Challenger disaster (and that being an astronaut requires high physical fitness), and my desire to be an astronomer died when I learned they mainly use physics in their day-to-day career. However, a small part of me still clung to the hope that I would get to see a solar eclipse. An annular eclipse occurred some time in 2012, and I was ready to get a chance to see- it got blocked by clouds (and we didn’t even have eclipse glasses). The next eclipse was the “great American eclipse” in 2017, and even though it had been so long since I had a special interest in space, I was so excited to finally get to see a near-total had school that day, and they did not let us see the eclipse at all.

Fast-forward another 6 years, and my interest in space is essentially dead, until I take this class. Now, thanks to the Secret World of Stargazing, I start getting the random urge to go outside and look up at the stars and planets that have always been there, and it’s almost like I’m back home to my childhood days. Now, I hear that there’s a partial eclipse and a total eclipse coming soon, and I realize that this was the chance to finally see the Solar Eclipse I’ve wanted to see for at least thirteen years. Now, not only was school not there to block me (it was a Saturday), but school was actively on my side as I was required to see it for my class. A few weeks before, I ordered eclipse glasses for my entire family from Celestron, checking that they are approved by NASA for safety. The solar eclipse on October 14 might just be an annular eclipse (or rather, a partial eclipse for Dallas), but it might be my only chance to get to see ANY solar eclipse (if the April one is blocked by clouds, and there won’t be any more solar eclipses in the US until the 2040’s). In the days leading up to it, I began to grow a little on edge as the sky was completely overcast, but thankfully it cleared up the day before. Now, all I had to do was wake up around 10AM to get to see the start of the eclipse.

The day has arrived. I am woken at around 11:20AM by my mom, who wants to know where I put the eclipse glasses. I had overslept because I had stayed up late for reasons I no longer remember, so I quickly get ready so I can see the peak at 11:54 AM. Not only did I want
to see this eclipse, I wanted to take a picture of it so I could include it in my moon lab as the only possible way to see a New Moon (I’m not the type to record memories for posterity with pictures, but it also served that function too, I guess). There was an event on UTD campus to see the eclipse, but A) I wanted to see the eclipse with my family at home and B) I was too lazy to drive to UTD on a Saturday. My plan was to put my eclipse glasses over my phone’s camera, and then take the shot. This was difficult as iPhones are terrible at focusing on objects in the dark, but somehow with enough fidgeting I convinced my phone to focus on the eclipse and took the photo. The result can be seen below, taken at the peak of darkness (~60% coverage).

One of the most interesting parts of the eclipse was the shadows. I knew that when light is filtered through holes during an eclipse you can see the eclipse’s shadow. This was a method I was told I could use as a child in order to “see” solar eclipses, and I had long decreed it as not really seeing it with your own eyes (through eclipse glasses, of course). I still hold that viewpoint, but as an accessory to directly viewing the eclipse it was very fascinating. I got a picture of it happening through one of my pool deck lounge chairs, and seeing the eclipse pouring through every little hole was not something I was quite ready for.

After the peak, I stayed around to watch most of the rest of the eclipse with my mother until we decided we were satisfied. And I was satisfied, because I had finally gotten to fulfill my childhood dream of seeing a solar eclipse. However, my eclipse journey is not yet done. Surprisingly, my happiness might be even more fleeting than when I was in second grade, because I still have yet to see the greatest eclipse of all, the Total Solar Eclipse. I have heard it is an experience like no other, when the Moon completely consumes the source of our life light and we are left with night in the middle of the day. Only when I see that will I be fully satisfied. With my renewed interest in space, I intently watch the skies for other phenomena, until the day when I can finally say I have completely seen the Total Lunar Eclipse and the Total Solar Eclipse.
My experience of the Solar Eclipse

Solar and Lunar eclipses have been happening for centuries. Many years ago, when much research was not done, people assumed that the eclipses were just some natural event or that perhaps the gods were angry with each other. People would react differently to the sudden change some eagerly recording information while others would be in fear or awe. However, in Islam, it is said that the eclipse is a sign of God since something as massive as the sun and moon that usually follow the same pattern day in and day out can change within the blink of an eye proving something no human or statue could do. It is also supposed to be reminder to the people that the world is going to come to an end since one of the signs of the “beginning of the end” (or as Muslims call it the day of judgement) is that the sun will rise from the west and set in the east.

Growing up in a Muslim household looking up at the sky was not uncommon. We looked for the moon on the nights of Ramadan, Eid, beginning and end of months. We also look at towards the sun for direction and timing of prayer. So, when there was a solar or lunar eclipse, I would see many people gather in a mosque and pray. In fact there is a specific prayer called Salat al Kusuf which is unlike the five daily prayers; there is no call for prayer (azan) and its just two movements (rak’at) unlike the usual 4.

There are two types of solar eclipses: Total Solar Eclipse in which the moon covers the sun completely. The second a Partial Solar Eclipse and like the name suggest it only covers the sun partially. On Saturday, October 14, 2023 a partial solar eclipse began in Texas around 10:23 am. During this time I was at work but made sure to set an alarm. I had brought my glasses and was not expecting to see much since my parents made sure we never looked at the sun or moon during that time. So when the time came I grabbed the eclipse glasses that seemingly showed nothing while indoors I went outside and stared right at the sun around 10 and was absolutely amazed at how I was staring directly at the sun and I could make out the shape! I got so excited I called my coworkers to come and try the glasses. None of them had seen the eclipse like this before either. We all took turns going in and out with the glasses and taking pictures over the course of 2 hours (images attached below).

I have heard/known of eclipses in the past but never have I experience it like this. I decided to save the glasses and I look forward to watching the eclipse that is going to happen next year.
Annular Lunar Eclipse

The annular solar eclipse is also known as the ring of fire. It is the point where the moon passes between the sun and the earth at its farthest point. I was located in Oklahoma City at the time to visit my family. According to news reports, the eclipse started at 10:21 a.m. and had maximum coverage at 11:49 a.m. The whole duration would last about 3 hours. I unfortunately had forgotten that the eclipse could not be viewed with the naked eye or with sunglasses so I attended an event at a local park where they sold the glasses. Without the glasses, it was almost hard for me to even look around normally. The eclipse made the surroundings strangely bright, but also dim. I researched how the lunar eclipse could potentially damage your phone camera, so I was not able to take any pictures.

We started at around 10:30 a.m. and there were little signs of the moon overlapping with the sun, but there was a first contact. There were many people outside at the time and I chose to be next to a tree in hopes of seeing the moon projections on the ground. I was able to see them later through the process. I think they were my favorite part of the whole experience.

At around 11 a.m., there was an obvious change in temperature and the brightness around us began to dim. It was similar to how I would expect it to look later in the day. There was little color in our surroundings and it was interesting to see almost a grey tint to everything.

At around 12 p.m. the moon reached its maximum point of eclipse where the sun was the most hidden. The complete annular phase of the solar eclipse was not visible in Oklahoma City, but we were able to observe a partial solar eclipse. The moon was able to cover about 80% of the sun. We were not able to see the full experience of the Ring of Fire, but we were able to see a crescent form.

I was not able to stay the full time, but the annular lunar eclipse was truly a sight to see. Although I would have wanted to attend the event hosted at UTD I was not able to. The experience was very astonishing, but I don't think I would go again. Even with the glasses, the lighting was a little harsh for my eyes.
Eclipse at UTD

On the morning of October 14, my sister and I got ready to head to the eclipse viewing at UT Dallas. As we left, we already noticed a difference. While the sun seemed out, shining and sending its golden rays as usual it was noticeably cooler. With the October we have had so far with temperatures even rising to the 90’s, the cool air felt refreshing. We hurriedly went back in to put on our sweatshirts and started driving to the viewing.

As we entered the campus parking lot, we already started seeing people walking around with eclipse glasses staring at the sun. To us, the sun and the surroundings didn’t seem much different than any other day. It was bright and for the most part normal. We knew it was only an annular eclipse, so in our mind we didn’t see any difference due to the fact that the eclipse had not reached its peak yet.

As we arrived in front of the Sciences building, the field was abuzz with activity. Students, professors, and families from all over had gathered, their eyes turned skyward. Additionally, there were stations scattered in the corner. Excited to see them all, we hurriedly went to get our glasses to start. As we approached the solar eclipse glasses, we were greeted with a familiar face in a large moon costume! She greeted us and we talked. She said that if you look at the sun with these glasses, you would already be able to see the eclipse occurring. My sister and I were a bit skeptical but sure enough, as we stared in the sun, there was a big black ellipse in the sun. It looked like someone had taken a bite out of it. We stared at it and nearly simultaneously said, “Woah...”. It was an impactful thing that felt almost humorous. Neither of us had ever seen an eclipse in person before and our minds were trying to wrap our heads around the supposed never changing sun, the object that literally had looked the same and constant for us for our whole lives to change so drastically. After a short while we took them off to go look at one of the activities, still checking in on the Sun every couple of minutes.

We headed to see a device that had the ability to see sunspots. The guide who was near them said that due to the Sun not being as bright on the Earth. Sure enough, we looked around and in the past hour as the eclipse was reaching its precipice, it was noticeably darker. We looked at the sunspots, something unfathomable except for these few hours. Following this viewing we decided to go and take a walk around campus.

As we walked around campus one of the most interesting things, we saw was how the shadows on the trees looked different, almost psychedelic. The shadows danced with the swaying of the trees producing these ringlets. We were in awe of how this solar event had shaped our understanding of the world. To use the familiar felt unfamiliar, the normal became strange. It felt both awe inspiring and confusing as we marveled. Soon the eclipse was over, and we started heading back. As we drove away from UT Dallas, the once-altered sun now resumed its familiar brilliance in the sky. Reflecting on the day, it wasn’t just about the celestial dance above, but also about the profound realization that even the most constant things in our lives can, for a fleeting moment, surprise and mystify us. The eclipse was a reminder of the universe’s grandeur and the ever-present wonder that surrounds us, waiting to be discovered.
F. David Velazquez
Professor Gossin
HIST – 3328
October 21, 2023

I had woken up right when the eclipse started but it was too early for me to see anything just yet. So, I went ahead and started to clean my house as my parents were on their way home from a weeklong cruise to Mexico. Soon enough I went outside and grabbed my eclipse glasses and watched as the moon was starting to move into the sun’s pathing.

Seeing the moon move into the sun was an experience I have not had before. It was new and amazing to look at, especially as around me I could see the amount of sunlight around me started to lean away, everything getting slightly darker. I would then try to take a picture of the eclipse using the glasses, but that would end up being a mistake as I could not see through the glasses with my phone camera. So instead, I would point my camera directly to the sun, using my left hand to make sure I don’t stare at the sun directly. I would find out that through the reflections that appear on my camera phone, I was able to take pictures of the eclipse.

As I finally took my first image, my mailman who was doing his route stopped by my house, where I offered him my glasses for him to get a glimpse of the eclipse. He would take a quick look and tell me how a few years ago when the eclipse went through Louisiana, he was there and used glasses to watch it completely cover the area. He wished me luck and I would continue to keep taking pictures and watching the sun. Soon enough I called my parents on their drive back and let them know about the eclipse, they were able to meet some people on the road who lend them some of the glasses which let my family watch the eclipse from more south, though no where near the ring of fire.

As I soon ended the call with my mom, I would call my brother who just moved back to Texas and was telling him about the eclipse, he was rather excited about it but unable to see it himself. That is when I continued to take pictures, where when put next to each other can see the moon moving into the pathing of the sun more and more, though never getting a full eclipse it was amazing to see it happening right in front of me.

Something that we may now consider normal, or just a scientific fact, happening before me would remind me how previous astronomers, who did not know why the eclipse was happening and in turn would create legends on why it was happening. Then there were some who did know, but even then both types of astronomers/people would eventually create a negative annotation when it came to eclipses, making it seem like a curse rather than a natural phenomenon.
Annular Solar Eclipse Opinion Report

Unfortunately, I was out of the state during the weekend of October 14th, 2023, due to a family emergency, so I could not see the solar eclipse myself nor participate in the Solar Eclipse activities on campus. Based on the social media posts that I’ve seen regarding the event, it looked like so much fun! However, as a replacement or supplement, I have been watching the live stream that NASA posted to YouTube that day.

The video starts with a view of the sun in the corner, with a bit of the moon peeking over at the start of the eclipse. The sun looks significantly different like it has a singular smooth texture of orange. This differs from the sun I am used to seeing, which typically looks like a very bright yellow. Additionally, the sky around the sun looks dark black already, and the moon has not even passed that far over the sun. I think this concept is incredibly interesting because I would have thought the sky would have stayed relatively blue until the moon passed in front of the sun. However, this black was persistent across the entire eclipse. Around the sun’s orange is a soft ring of a sort of “halo” around the sun. This cloud of light surrounds the sun on all ends.

As the eclipse progressed, it seemed to change color to a more yellow, and the moon’s shadow over the sun grew gradually. I think that the moon moved much slower than I thought it would. I’m unsure why, but I was under the impression that the entire eclipse would take about 20-30 minutes, while this live stream took about 2 hours to complete their total eclipse coverage. However, the information they provided about the eclipse I found very interesting and valuable as supplemental to the astronomical phenomena I watched in “real-time.”

I also found the phenomena of not being able to look at the sun for an extended period, especially during the eclipse, fascinating because it was dangerous to your eyes. Because the field of medicine intrigues me, as I want to pursue medical school, the health impacts of the annular eclipse were exciting to me. I didn’t realize how the sun could create blind spots in the human retina that would not be able to regenerate after. I remember when I was in high school, another eclipse took place. I don’t remember wearing solar eclipse goggles at the time, but I turned out completely fine after the fact.

Once the solar eclipse moved to annularity, it was a beautiful sight. The camera that NASA was using was located in Albuquerque, New Mexico, and the skies were incredibly clear. The clear orange ring of the sun entirely around the black shadow of the moon was indeed a sight to behold. The eclipse was in total annularity for about 15 minutes, and it was an impressive 15 minutes to take in and view. The ability to see such a magnificent and unique scientific phenomenon that took place this year was such a beautiful experience and a sight to behold.

I’m sad that I missed the annular eclipse in real time, but I’m grateful to have been able to watch the live stream that NASA provided. The eclipse was stunning, and I look forward to watching the next eclipses and astronomical phenomena that will come in the future. Discussing the eclipse and its impacts in class allowed me to truly realize and value it for what it was. The experience was way different than if I had watched it without the knowledge I gained from this class and the class I took last semester that covered astronomical phenomena such as this.
Annular Solar Eclipse Observation

For the solar eclipse on October 14th, 2023, I was fortunate enough to observe the event from the comfort of my apartment balcony in Richardson Texas, with a clear and unobstructed view of the event as it transpired from around 10:30am, reached its peak around 11:55am, and concluded around 1:30pm. As this was my first experience viewing an eclipse the entire process was quite interesting. From my location the sun appeared to be facing southeast and as the eclipse traveled the sky it moved downward from south to east. I found the gradual growth of the shadow to be quite mesmerizing as it interacted with the sun and noticed a change in the perception of my surrounding environment as the eclipse reached its peak. The lighting was subtly, yet noticeably altered, as if someone had made a fist in front of a lamp and the world seemed to grow more quiet. Although the eclipse was not complete (total eclipse) from my location in Texas, the event was spectacular and memorable.

As a first time observer I found myself bouncing between the changes in the sky and in my surrounding environment to be quite fascinating. The shifting of my perception of the world around me was entertaining to view and emphasized how our brain interacts with surrounding stimuli as the way I viewed things (however minorly) transformed in front of my eyes. During observation I reflected on how past humans and animals had perceived/experienced events such as the annular eclipse and what they may have thought about it or what caused such events as well as what/how the meaning of those beliefs impacted their ways of living. For an oracle the eclipse may have forshadowed a bad omen, but for the herdsman it could have been another marker indicating a harvest.

It is impressive to think about how far we have come in our observations and calculations of the sky and celestial events such as the annular solar eclipse. However, it is equally if not even more remarkable to reflect on the observations and calculations of our ancestors. Although the ideas and designs weren’t flawless (a feature we are still striving for) it is inspiring to think about how much they got right when considering the available technology and knowledge. It is also unifying to know what I have observed they also saw, and due in part to their fascination, has been studied and explored more than ever before.
The “Ring of Fire” Eclipse

On October 14th, 2023, an annular solar eclipse was visible in parts of South, Central, and North America; including Texas. (NASA). An Annular Solar Eclipse occurs when a new moon passes perfectly between the Earth and the sun without covering the sun completely. Since it occurs when the moon is at the point when it is farthest from the Earth, it looks smaller, creating the “Ring Of Fire” effect. On the other hand, total eclipses (like the one coming in April) occur when the moon is closest to the Earth, making it appear larger and block the entirety of the sun’s rays. (SciShow Space)

The pinhole effect is a phenomenon observed when small rays of light converge as they enter a small aperture, and diverging rays are eliminated. The effect allows for a sharper, more focused image that is reversed and inverted onto a surface. Under normal conditions, when light passes the small openings in leaves, shapes of circles are projected to the ground below, because the sun is a circular light source. However, during the eclipse, crescent shaped light sources are projected onto the ground instead. This is because the sun’s light source is no longer circular, it is being blocked by the moon in most areas but the outer edges. (SciShow Space).

This is significant because it has allowed us to view the visual effects of the solar eclipse without any special equipment (like eyeglasses) or without staring at the sky and risking ocular damage. Instead of needing some type of instrument for viewing this phenomenon and risking serious damage from solar radiation, we can just look at the ground beneath the trees or any other natural apertures and see it in action.

I personally love optical physics so being able to see this effect in person was very cool. It also combined with my passion for neuroscience, as we are able to interpret how pinhole cameras are similar to our eyes. When light enters our pupils, they are projected onto the back of our retina upside-down, like when the light enters the aperture of the camera and is projected upside-down onto the inside. The images of the sun being projected are real, reversed and inverted, because of the way the light rays hit. The rays from the top of the object are now hitting the bottom of the image, and the rays from the right of the object are hitting the left side of the image (and vice versa). This is also the first annular solar eclipse that I’ve seen since high school, so I was just in awe the whole time.
Citations

IMAGES: taken by me


Bonus: (a great song)
https://open.spotify.com/album/0ucV57dbmqmrGv9d60r6X2?si=oifckmFiQKuG3jdhOkumeA
Arrsh Ali  
ARHM 2343.HN1  
Professor Gossin

Waking up on Saturday, October 14th, the day of the solar eclipse, I begin getting ready for the day, not knowing what to expect when I head outside. I grab my roommate and drag her out of the door so that we both can go look at the phenomena. Going outside I see a crowd of people and I am immediately shocked, “I had no idea this many people were going to come on campus for the eclipse” I thought, and kept walking to the crowd. As I am walking I walk under a tree and noticed something off about the shadow. The shadow of the leaves is crescent shaped, which I thought was so strange. As Professor Gossin told us in class, “nature is used as a lens to show what else is happening in nature”, and that is exactly what was happening when I saw that shadow. Once I approach the crowd, my roommate and I pull out our solar eclipse glasses and gaze up into the sky. But I no longer see a circular star beaming down at me, but now see a crescent shape. Is that the moon? Is that the sun? It’s both! When I looked up, the eclipse was at its peak, so the sun was 80% covered by the moon, causing the sun to now be a crescent shape. I looked up for a few minutes, and then began to notice changes in my surroundings. The world seemed darker. It was still bright outside, but was darker than usual, as if there was a filter placed on my eyes. Additionally, when at the SCI building courtyard, a lady approached me and told me to place one hand on top of the other, causing my finger to interlace, and allowing holes to appear in between my fingers. When I looked at the ground, the sun was peering through those holes and created a crescent shaped shadow. This is similar to what I noticed under the tree. Moreover, there were changes in the weather. When I first walked out, the weather was cold enough to wear a hoodie and some pants, but not freezing cold. I would like to guess that the weather at the time was around the 50s or mid 60s. However, after the eclipse had passed, the it began to warm up rapidly. The hoodie that I was initially wearing comfortably now made it seem like I was walking through a sauna. This goes to show the impact that the sun has on our weather. It is obvious to claim that the sun generates heat, and that heat is what warms us up here on Earth. However, what we fail to realize is how hot the sun can actually make us. The eclipse brought that into perspective and displayed how impactful the sun is. Along with Earthly weather, another form of weather is space weather. Space weather refers to phenomena like meteor showers and eclipses as those events are things that happen rarely. This emphasizes how changes in the sky not only change our weather down here, but also change the weather up above and in the beyond.

Another important point to make is how nature works together to create the phenomena that is the eclipse. It is interesting to see how the sun, a star associated with the day, and the moon, which is associated with the night, combine together to form such a unique spectacle. The combination of two different times of day displayed that all that the entire sky is intertwined. Thus, the solar eclipse was a rare spectacle that I had the privilege of viewing, teaching me about the rarity and impact of our sky.
On October 14th, I had the wonderful opportunity to witness the annular eclipse in Austin, Texas. I shared this experience with my mother and two of her close friends, Shamira and Viktoria. We were at an outdoor farmers market that was jam-packed with people from stylish influencers to wholesome families looking for a fun weekend activity. Each of the vendors' stands featured a large array of handmade goods such as goat cheese, leather wallets, and personalized flower bouquets. As we traversed the cozy market, we noticed a commotion stirring amongst the crowd. People began raising their phones to the sky while shutting their eyes. However, others were more prepared as they donned their eclipse glasses. "The annular eclipse!" I shouted aloud to my mother and her friends. We scrambled to find a pair of glasses to borrow. Once we looked through the borrowed specks, we were met with something absolutely breathtaking. The Sun, in its orange-hued glory, was slowly being overtaken by its poetic opposite the Moon in a fantastic astronomical display. Funnilly enough, the annular eclipse reminded me of the cover of a totally underground, never heard of before fantasy novel series from the early 2000s. The series had something to do with moody vampires, hotheaded werewolves, and the Loch Ness monster? Though, the name of the series seems to be totally lost to me...

Once I recovered from my state of awe, I managed to snap a photo of this enchanting phenomena. To capture the eclipse, I placed my eclipse glasses over my iPhone camera lens and adjusted the camera settings to pick up the overlapping celestial bodies. After taking my photograph, I passed the glasses along to my mother and her friends so they could marvel in awe of the eclipse and snap photos of the wondrous occurrence. In addition to viewing the actual phenomena, we were able to see evidence of it in our natural surroundings. Something we had realized after witnessing the eclipse was that the temperature around us seemed to drop drastically. This was evident by our shivering and the appearance of goosebumps on our arms. On top of that, it seemed like the light around us was altered. We remarked that it appeared as if there was a dim Instagram filter placed on our surroundings. Finally, we were able to capture evidence of the eclipse in the shadows of ourselves and our environment. Most evidently seen, as I caught in a photograph, were crescent moon shapes in the light areas of a tree's shadow. Although, I thought the distortion of our own shadows was incredibly interesting as our usually solid shadows on the pavement featured odd wisps emanating from them. I have included both photos of the annular eclipse and the tree's shadow in this report as they are too good to keep all to myself!

All of these observations can be explained by the annular eclipse. The temperature drop is due to a reduction in solar radiation as the sun is being covered by the moon which causes less of its rays to hit Earth. Additionally, the dimming of our environment is also explained by the sun being obscured as this partial eclipse reduces the amount of light that can clearly travel to Earth, causing this twilight effect. Finally, the crescent shapes in the shadows appeared as a result of the sun being partially covered. Overall, the event was truly a memorable part of that Saturday and this frigid season as a whole. It took a relatively mundane market visit and elevated it by bringing us a magical moment to share as a group. This event has encouraged me to keep searching for more opportunities just like it as it was truly a beautiful thing to witness on a chilly Autumn weekend surrounded by loved ones.
Partial annular eclipse in its partial glory.

Evidence of the eclipse in the shadows!
Annular Eclipse 2023

This is the second time I have seen a solar eclipse in my life. The first time was the total solar eclipse in 2017. I had been in Boise, Idaho at the time, which was extremely close to the zone of totality. I don't remember much about it, but my most vivid memory of it was looking at my surroundings and slowly watching the color drain out of everything. (I'm probably remembering falsely, but for some reason when I try to recall the images, I remember the colors being desaturated and not dimmed, i.e. they were becoming more gray rather than darkened). It was a surreal experience, like I had multiple layers of vision that shut off one by one.

This time, I was surprised by a couple things. The first was that eclipses are actually not that rare (at least twice every year!) It makes me want to view more eclipses in the future considering all I would need to do is find eclipse glasses and set aside a few minutes of my day. Another thing that surprised me was the length and shape of the eclipse. It began around 10:30 am and ended around 1:30 pm, lasting about three hours. I had presumed that it was one of those "picture-perfect" spectacles that you would miss if you blinked. If that were the case, I would have tried to watch it in its entirety, but to be honest, I don't have the focus nor conviction to stare up at the sun for three hours straight. Instead, I did some schoolwork on my laptop while periodically looking up at the sun with the eclipse glasses.

I expected the moon to make a straight path across the sun (right to left), but instead it travelled in the shape of an arc. It started from roughly the top right and moved down and to the left a little until it blocked out enough of the sun to make it look like a thin crescent on the left side. Then, it started moving more towards the left, making a bigger crescent on the top. Finally, it exited the bottom left side, not quite 180 degrees from where it had started. It appeared to have entered up-upper-right and exited directly down-left. I assume that this arcing motion is due to the complex orbital mechanics of the Earth and moon, which are too complicated for me to understand and explain.

This is my best guess: When an eclipse occurs, it's because the moon's orbital plane lines up so that it can intercept the path between the sun and the Earth. The moon started rising slightly earlier today than the sun but in roughly the same direction. As the day went on, the sun started catching up to the moon because altitude changes more slowly as a body reaches its peak, allowing us to begin seeing the shadow of the moon against the sun. However, the moon's path is slightly more to the east than the sun's, causing it to appear to move to the left. This effect is more noticeable with higher altitude because the angle of direction changes without as much movement, which is why it doesn't seem apparent that the moon is moving east relative to the sun until later on in the eclipse. All of this results in the arc. All of this also could be completely false as it's just a guess. Bravo to the scientists who were actually able to make coherent sense of planetary motions.

All in all, this was a neat experience. I noticed it was quite chilly, but I wasn't sure whether that was due to the eclipse or if it was just one of those cold days. I didn't notice any significant changes in brightness, but it was nonetheless a visually appealing phenomenon.
Eclipse Write Up: Personal Observation Experience

ARHM 2343.HN1

Lucy Mettee

Side note: I made a Spotify playlist for the eclipse, available here. Includes songs about the Sun, moon, stars, space and other concepts that spoke to me during the eclipse. I listened to these songs all Saturday morning and afternoon and I (with significant bias) recommend listening to it. :)

On October 14th, 2023, Dallas, Texas experienced a partial annular eclipse and I was lucky enough to experience the full duration outside with an entirely cloudless sky. As this was a Saturday, I started the morning on a local group bike ride from 8:30 to around 10:30 AM. While we were out, I kept trying to see if I could glimpse the moon as it moved into position but I could not see it at all with the Sun so bright. I was able to track its progression with an app on my phone to show where it was in the sky though, letting me feel like I was participating. The eclipse started in actuality just as we returned to the bike store, and I immediately pulled out my eclipse glasses and announced that the eclipse started, even if no one else was as excited as I was. I took my first picture through my eclipse glasses with my phone to send to my family in the Northeast to brag about the eclipse at 10:46:

Then I biked back to campus and had the lovely surprise of rediscovering eclipse shadows:

I stopped in the middle of the sidewalk to look at these and just enjoyed them for a while. It occurred to me that even if someone did not have eclipse glasses to directly observe the eclipse, they would know it was happening because of the shadows changing. I realize that this is a simple way to participate in the eclipse in modern times, but I was also thinking of ancient times, that even if an eclipse
was not total, people would be able to observe its effects if they looked closely, making it unlikely for an eclipse to go unnoticed.

I then joined the UTD watch party at the Sciences building for the peak of the eclipse and enjoyed talking to people there as well as people watching. There were a number of observational activities happening like finger meshing to create small shadows and projections set up around the Green. The best parts of this group were the families who came and the two lovely people dressed as the Sun and Moon willing to ‘demonstrate’ the eclipse for anyone who asked.

After the peak of the eclipse passed, I left the gathering and set myself up in my own hammock to watch the rest of the eclipse by myself and just enjoy it. I listened to my playlist and thought about the effects of eclipse and how small people really are in the face of cosmic events like this. In the process of
these deep thoughts though, I forgot that even partially obscured, the Sun is still the Sun, and I got a solid sunburn from staring at the Sun for multiple hours in the shape of my eclipse glasses. It was also the perfect time of day when the eclipse finished that I very acutely felt the temperature increase when the Sun was fully uncovered, leaving me to wonder what animals might think about the eclipse if they do at all. Would it just seem like a shadow and slight temperature shift? Or be more cause for concern because the shadows looked different? I was also grappling with the optical illusion of not perceiving the Sun crescent as a crescent moon, but actually completing the moon shape in my mind to see the two spherical objects. Nonetheless, the eclipse was complete and I fell asleep in my hammock with the increased temperature and proceeded to make my sun burn even worse. Overall, it was a great day and I formed some great memories by participating with UTD events and the community.

Appendix: Eclipse Playlist

<table>
<thead>
<tr>
<th>Song</th>
<th>Artist</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>August 21, 2017: Total Solar Eclipse</strong></td>
<td>Sleeping At Last</td>
<td>Beautiful orchestral piece</td>
</tr>
<tr>
<td><strong>Standing on the Moon</strong></td>
<td>Grateful Dead</td>
<td>Very moving, always makes me cry</td>
</tr>
<tr>
<td><strong>Total Eclipse of the Heart</strong></td>
<td>Bonnie Tyler</td>
<td>Classic, crime to leave it off</td>
</tr>
<tr>
<td><strong>Moonlight Shadow</strong></td>
<td>Mike Oldfield</td>
<td></td>
</tr>
<tr>
<td><strong>Hunter's Moon</strong></td>
<td>Ghost</td>
<td>Wrong type of moon but good song</td>
</tr>
<tr>
<td><strong>Galileo</strong></td>
<td>Indigo Girls</td>
<td>Reincarnation, Galileo, thinking about the past</td>
</tr>
<tr>
<td><strong>Bad Moon Rising</strong></td>
<td>CCR</td>
<td>Relates to eclipse as bad omen</td>
</tr>
<tr>
<td><strong>Southern Cross</strong></td>
<td>Crosby, Stills, and Nash</td>
<td>Wrong hemisphere, fantastic song</td>
</tr>
<tr>
<td><strong>Constellations</strong></td>
<td>The Oh Hellos</td>
<td>Upbeat, folksy</td>
</tr>
<tr>
<td><strong>All Along the Watchtower - live 7/4/89</strong></td>
<td>Grateful Dead</td>
<td>Great song, nostalgic</td>
</tr>
<tr>
<td><strong>Watcher In The Sky</strong></td>
<td>Ghost</td>
<td>Forces beyond our perception</td>
</tr>
<tr>
<td><strong>Black Hole Sun</strong></td>
<td>Soundgarden</td>
<td></td>
</tr>
<tr>
<td><strong>House Of The Rising Sun</strong></td>
<td>The Animals</td>
<td></td>
</tr>
<tr>
<td><strong>Sunlight</strong></td>
<td>Hozier</td>
<td>Importance of the Sun</td>
</tr>
<tr>
<td><strong>Midnight Moonlight</strong></td>
<td>The Firm</td>
<td></td>
</tr>
<tr>
<td><strong>Icarus</strong></td>
<td>Bastille</td>
<td>Good mythology song</td>
</tr>
<tr>
<td><strong>First Light</strong></td>
<td>Hozier</td>
<td></td>
</tr>
<tr>
<td><strong>Supermassive Black Hole</strong></td>
<td>Muse</td>
<td>Wrong phenomenon, but Muse is great and black holes are in space</td>
</tr>
<tr>
<td><strong>Harvest Moon</strong></td>
<td>Lord Huron</td>
<td>Wrong type of moon, similar artist to Hozier</td>
</tr>
<tr>
<td><strong>Kaisarion</strong></td>
<td>Ghost</td>
<td>Speaks of the Heavens as well as the ancient astronomer Hypatia</td>
</tr>
</tbody>
</table>
Topic: Solar Eclipse

Although we were given the lenses, I forgot them at my dorm, so I watched the NASA live reporting through the TV. Despite not being the same as watching the sky in person, I realized it offered an interesting perspective. They were able to capture different angles from various cities as the moon crossed the sun. I got to see the pathway of the total eclipse moving from Oregon to New Mexico and then back to Oregon before finally entering Texas. The place hit by the total annularity, according to the live stream, was Albuquerque, New Mexico, and the last location was Kerrville, TX.

As I watched the live YouTube video, I could glimpse the sun at the very beginning, glowing bright orange. However, as some parts of the moon covered the sun, it started to shift from bright orange to a lighter yellow. I believe the change in the sun's color in the picture could also be correlated with the sudden change in temperature occurring outside. I assume that when the moon was directly covering the sun, the temperature for that particular area decreased during total annularity because the sun's rays weren't hitting the Earth at that point.

The live YouTube video supported my assumption, as it mentioned that people from different places emit radio signals, which scientists think could help measure changes in the ionosphere atmosphere. I find it a fascinating way to monitor changes in our atmosphere, but I also wonder if it could be a means of contacting extraterrestrials. It might be a far-fetched idea, but I do wonder if these timings might be considered auspicious for events to occur and for us to observe. At least in my culture, people consider it an inauspicious time, and many couldn't explain this event in the past; they still regarded it as an ill omen and would recommend everyone to stay inside.

I think it's interesting how sometimes our culture may not have explained these events, but they have been passed down through generations through storytelling and other forms of communication, such as the Vedas.

The solar eclipse made me reflect on what my parents told me as a child and how I used to ask them questions about why the moon would cover the sun and why we needed to make sure that we were home during this time. However, I never received a proper explanation before. This is something that has been practiced for years and has proven to be accurate so far.

However, I now truly understand what an annular solar eclipse signifies. In contrast to what my parents used to say when I was a child, I used to simply listen to what our teacher said about the eclipse and why we aren't allowed to look at it directly. But watching it now, 15 years later, made me realize how dangerous it could be and how it could harm the retina and cause permanent damage to my ability to see.

In addition to becoming more aware of my surroundings during the eclipse, I have begun to appreciate the stories I was told as a child, and I understand the various beliefs people had about the night sky. It has helped me understand the different perspectives when I view the sky, and I try to recognize patterns rather than relying solely on the scientific reasoning we learned in school or in classrooms through books.
Extra-Credit Opportunity: Solar Eclipse

October 14th, 2023 UT Dallas had the chance to view a solar eclipse. I can vaguely recall the last Solar Eclipse Texas had, I never got to see it. I was determined to at least catch a glimpse of this one, which was actually very easy. A beautiful day, no clouds in the sky with a clear view of the sun. I invited a couple of people from my CSA club's family (Chinese Student Association). We agreed to meet at the Science building hoping that the event UTD had said was happening was actually happening. I was slightly disappointed at the fact that the University made little attempts to promote this event. If I was not in this class I wouldn't have even known a solar eclipse was happening, let alone a gathering in the Science courtyard.

I brought my eclipse glasses and left my house around 11:25 AM, knowing I would reach the courtyard right around its peak right before noon. My friends who came got glasses in the courtyard. While walking there I fought the urge to look up, wanting to have the full experience with my friends. Once I finally reached the courtyard I put on my Eclipse glasses, and then awkwardly put my glasses on over them. I was slightly shocked to see just how much the glasses blocked out, it was pitch black. When I looked up though, I could see the orange crescent outline of the moon moving over the sun. As I watched the eclipse an event volunteer came up and pointed to the shadows on the ground that had little finger nail crescents in them. I never would have even considered how an eclipse would affect the shadows. It was really interesting.

What I found to be touching was the community that the sky can cultivate. Multiple people from all sorts of majors, backgrounds, lifestyles, beliefs, gathering to look up. I saw some of my classmates there as well. Abigail seemed to have made a homebase at a table, her stuff strewn out across the top of it. I saw students dressed in sun costumes, and similarly moon costumes. Volunteers, with lots of experience with eclipses, warned people not to look at the sky without protection. After my friends and I finished watching the Moon as it moved over the sun we headed toward the visitor center to say hello to a friend working. While there we talked with lots of the student employees. Many of whom said while giving tours guests offered up their glasses to give them a chance to look at the sky. Kindness while working those types of jobs is rare, but the sky can bring us together.

These actions can lead me to a sound conclusion that the sky is more important to cultures than many people realize. I have lived my whole life with very little awareness of what exists above me. Even so, I still remember in the past when my family made me sit outside for the Eclipse, or for a meteor shower happening while we were in Canada. Viewing the skies is in our nature. It is a common culture we can all understand. I am so excited for the Eclipse happening April 8th, on my birthday too! I would have never even known about it had I not taken this class.

Here are some picture I took of the Eclipse and shadows: