TEXAS A&M UNIVERSITY KINGSVILLE®

Department of Physics and Geosciences

Spring 2019 Newsletter

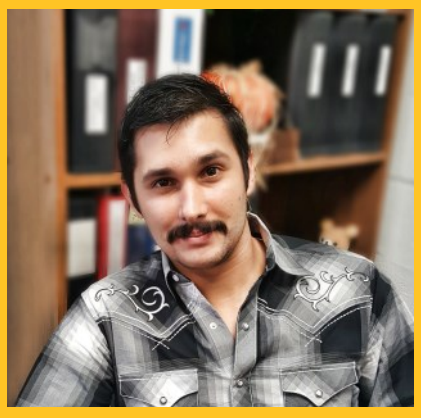
Volume 7 Issue 2

Contents

Around our Department

- Texas A&M University-Kingsville geophysics student chapter representatives have been selected to participate in 2019's EVOLVE program by the Society of Exploration Geophysicists (SEG) and Halliburton
  - Congratulations Monica Estrada, Itohan Agbonkina, Benjamin Benedict, Howard August Palacios, Toluwalope Bamisile, and Ajibola Samo!
- Congratulations to Monica Estrada for participating in the European Consortium for Ocean Research Drilling! This highly selective training course took place in Germany, and was a great learning experience. Great job!
  - Monica received funding from the US Science Support Program, the Coastal Bend Geophysical Society and the Corpus Christi Geological Society to cover her travel expenses.
- Congratulations to the two graduate students, Monica and Tolu, who received GTAs!
- Petrophysics graduate students attended a workshop at Texas Tech University (see picture)
- Monica Estrada will be attending Petrophysics Summer School at University of Leicester, UK from June 29th to July 5th. She is receiving support from the US Science Support Program.. This summer school is a CPD accredited 36-hour training in Petrophysics, which will greatly help her professional development. Great job Monica!
- A petrophysics graduate student, Erin Matthys was awarded the South Texas Geological Society Jones-Amsbury Research Grant.
- Congratulations to Ajibola Samo for receiving the Petrophysics Excellence Scholarship!
- Congratulations to our Spring 2019 All-Star students, Ajibola Samo and Toluwalope Bamisile!

Thank You Serjio!



The Department of Physics and Geosciences would like to thank Serjio Rodriguez for the amazing work he has performed at our department. Serjio has notified the department that his last day at his role of student assistant will be the 17th of May of 2019. His help with all administrative matters has enabled our department to grow and prosper, and we wish him all the best in his future endeavors. Thank you for all your help, Serjio!

Erik Hansen Student Workshop

On Thursday, May 2nd, 2019, Mr. Erik Hansen dropped by our department to hold a student workshop with Petrophysics students. He is the Chairman of Abaco Operating LLC, an oil exploration and development company with several projects in and out of state. He provided students with in-depth knowledge on oil exploratory work currently being performed in Texas. He also provided students with some well logs from some new projects being developed in Texas, and offered students the opportunity to collaborate with his company in the exploration of potential oil sites. Students the inquired about professional development opportunities, and Mr. Hansen gave students advice on how to best prepare themselves for a future career in the oil industry. It was a great opportunity for students in our department!

Sarita Elementary School

Thursday, February 21st, 2019, a group of about 30 students from Sarita Elementary came to be excited about space and the stars in it. There first stop was to use and learn about the two types of telescopes. The first type of scope was the refracting scope that was first used by Galileo in the 1600. What makes this scope great is that it puts the object right where it is in the sky. It is also easy to use. Point and shoot to see what is out there. Practicing this new skill, the students quickly progressed to our observation deck and immediately found that looking with this type of telescope was very interesting.

The second type of scope they learned and used was called a reflecting scope. Newton built several of these and his name is most commonly associated with this type of telescope. They are a little harder to use, as they needed to guess where the item was not able to be directly looked at. They had to work as a team to figure out how to see where the objects were.

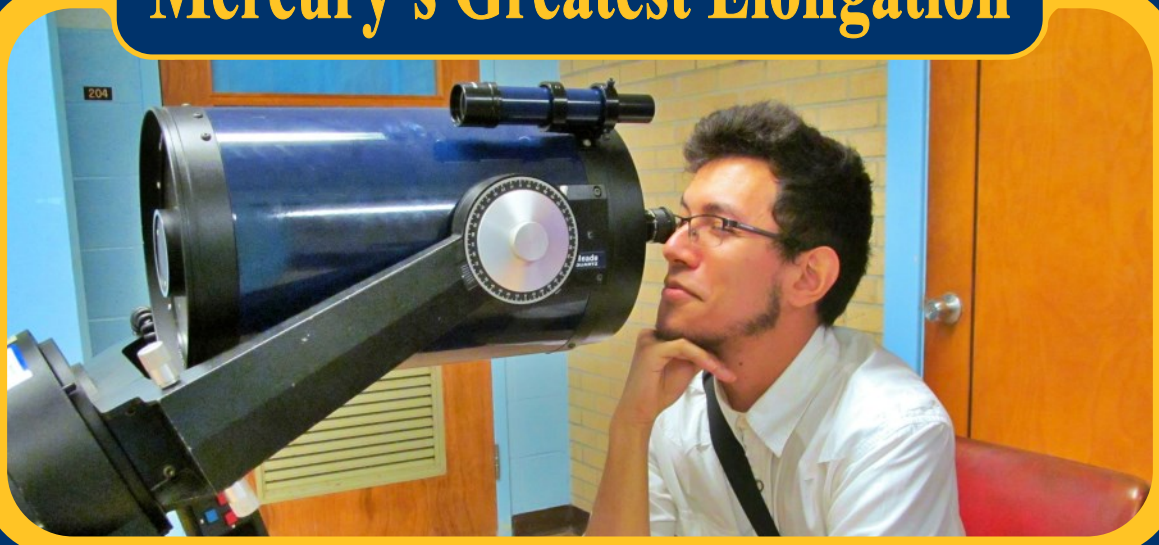
Mrs. Nelson then brought out an old army telescope that was adjustable for varying distances. The students took lots of interest in seeing what they could see with this scope as well. Their excitement could not be contained. Over 30 minutes of looking and discussing the differences in these scopes. Our thanks to Dr. Buckely for giving us these kinds of scopes to use. The children loved using these scopes.

Back inside to see the stars from a National Geographic short clip called 100 million stars in 3 minutes. We started the video by trying to count the number of stars in the video. As the video slowed down, I stopped them from counting the stars, which were flying by at an incredible speed, to have them look at the variety of stars. The students were asked to look at the variety of the type stars out there. They then were treated to looking at the Hubble Telescope and observing what was being watched at that moment in time. They were excited to see a small galaxies far, far away.

Then it was time for questions and Ms. Nelson answered as many questions as possible in the last 20 minutes. The questions ranged from what was a black hole to how long does it take planets to be formed. Their minds began to wonder about the Universe that they now live in. There was a quick demo about the spacing of our solar system and then about star systems as they moved past one another.

Students played the role of being a planet and exploring the distances between planets in space. The using a congestion of space, and then when galaxies slide past one another. Then we moved upstairs for looks through actual telescopes and to make our own personal star chart. The students were given the activity of cutting out and making their very own star chart so that could go home, teach their family members how to locate stars in the night sky by see set constellations.

Mercury's Greatest Elongation



Wednesday, February 27th, the Department of Physics and Geosciences hosted a Star Party. The occasion: Mercury reached it's longest elongation that day. At an astounding 18.1° over the horizon, it was an optimal opportunity for observation. Although covered by some thin clouds, we were able to observe the stars. Using departmental gear, students enjoyed an excellent star exploration.

After the star gazing, students used another telescope inside. This telescope was set up to provide students with a practical observation of how the large the magnification of the telescope is, showing 12 point text from about 100 ft away. It should be noted this telescope is over 50 years old! Surely, a great piece of history, as well as a functional tool for observing our universe.

After this, we brought the party a little closer to home. We explored the past geomorphology of the earth through the discussion of plate tectonics. Then, we went on to learn about the world's largest volcano eruption. Watching the documentary "How the Earth was Made: Earth's Deadliest Eruption," we learned about the methods used to find the eruption. Located in present-day Siberia, it covered the earth in a layer of volcanic ash. This allows us to study it today by excavating to that layer of ash, formed millions of years ago.

All in all, today's astronomy night was a great experience. Students learned about our planet's past, and explored our place in the universe. The department would like to thank Dr. Mark Ford and Ms. Cherrie Nelson for putting this even together, and looks forward to the next one!

Lyrids Meteor Shower

On April 24th, 2019, the Department of Physics and Geosciences hosted a star party to observe the Lyrids Meteor Shower, one of the most notorious astronomical events of the year. At it's peak, 18 meteors per hour, traveling at a staggering 29 miles per second, burn up in our atmosphere. For context, at this speed, one could travel around the earth at its equator in just 15 minutes. This shower has been reported since the 7th century, and is a recurrent cosmological show we can appreciate almost every April. Our Department chose it for the last star party of the semester.

Starting at 7:00, the party showed “How the Earth was made” to cover the deep effects meteor impacts have had on our planet. Students learned how physics, astronomy and geosciences come together to study craters caused by meteors. Several topics were covered, including how the largest meteors crashing into the earth have disintegrated on impact because of the massive momentum impelling them. Students also learned how geological stratifications can be used to estimate the age of the meteor impact, and the kind of telltale signs that indicate a crater could have been formed by a meteor.

Afterwards, students headed outside the Hill Hall to observe the meteor shower. As the sun was still out, students learned about the kinds of phenomena which could impact the observation of meteor showers, such as cloud cover and urban light pollution. This was followed a brief discussion of the Lyrids’ astronomical significance. After this, a telescope was set up in the observation deck at Hill Hall. Students learned about the telescopes our department has available, and were treated to the observation of a beautiful dusk as the meteor shower became visible behind the clouds.

Students observed of disintegrating meteorites, also known as shooting stars. The intensity caused clouds to light up, as fireballs hurtling towards the earth dissipated into our planet's atmosphere. After the star gazing, students were encouraged to keep looking for meteors at dusk over the following days; the star party was held at the zenith of the meteor shower, and meteors would still be observable for the next few nights. Overall, this star party was a fulfilling experience for students in our department. We would like to thank Ms. Cherrie Nelson and Dr. Mark Ford for their efforts putting this event together.