HI MEMBERS
HAPPY NEW YEAR

The 1st meeting of 2017 is on Friday the 13th at 7PM
SEE YOU THERE

BRENDA’S MINUTES

NO MINUTES, DUE TO DECEMBER CHRISTMAS DINNER


This normally used space, makes a good place to talk about 2017 DUES.

Hey members and past members, we would love to have you for the 2017 ASSET programs! Come join in with the rest of us. Dues are still $30 for family memberships. ASSET would like to have donations to the club also, to build our Outreach Program, teach astronomy classes to increase our astronomy knowledge, and get to look through club telescopes. Will is continuing to be our leader and does an excellent job.

(continued on page 2)

WILL’S WORDS

Out with the old and in with the new! 2016 has sailed away and in comes 2017 to take its place. We had a banner year for outreach this year and the star parties were a real treat. Eldorado was the cherry on top with all 7 nights being clear and observable! I hope you all got a chance to see some cool things this year and if not, try for it in 2017! Don't forget to get your dues in and perhaps even a donation to ASSET. We will be using those funds this year to increase our “outreach” abilities and add new perks for the members. Those donations are all tax deductible too! We will also be doing a beginner astronomy course as well as the solar observing safety class. Those will be happening in the early spring, so stay tuned for that! I hope everyone had a great holiday season and let’s make 2017 a year to remember!

Will

The Wolf Moon in January –
In January amid the cold and deep snows of midwinter, the wolf packs will howl hungrily at the Moon.
(DUES continued from page 1)

The "dues" will guarantee that you keep getting the StarGazer newsletter, learning astronomy and getting to observe through telescopes. Eddie will take your dues at the January meeting on the 13th. You can make your check out to ASSET and send it to the club at BOX 654, Groves, TX 77619. We have increased our membership to 40 by the end of the year, so this is a great time to build on that. And of course we want to invite our old members to come and rejoin, as we certainly miss you. 2017 is for you.

MURRY J. FRANK PLANETARIUM AND SHARON RIGSBY

The Murry J. Frank Planetarium is an extension of the Beaumont I.S.D. classroom. Under the direction of Sharon it has become a home for ASSET and is taken a little for granted. It is a real privilege to have Sharon as a member of our club and have this great meeting place. So we all need to thank her from time to time for the use of the facilities. As her programs such as Scout Day come around, we have had members to support her and we want this to continue that in 2017.

She has is already scheduling events for the coming year. In fact 2 are in April: Moons Of Jupiter (a data collection lesson for 6 graders) April 18th, and Scout Day April 29th. Sharon would like for the club to furnish some telescopes for those events and help out. Also, probably in March, Will mentioned in his “Words” that he wants to do beginning Astronomy classes and classes on the use of the club’s new Solar Scope and Sun safety. Plus there are make-up SP’s from last year. Thanks for helping!

ALERT, ALERT: WELL BEFORE I COULD GET ON WITH THE NEWSLETTER, HERE IS WILL’S ANNOUNCEMENT OF A RESCHEDULED STAR PARTY!

I heard back finally from the guy coordinating the Kids Museum star party, that was for last December. It is rescheduled for Friday Jan 6th at 6pm. It will run until about 8:30pm. We will meet at the River Front Park Circle Pavilion. I’m not exactly sure where that is but once you get to the park I think it's easily visible. We will need about 4 scopes or so. They aren't expecting a massive crowd but they think there will be about 60-80 people. It’ll be a moonlit night for sure! Those that can schedule this event, please get with Will so he can count on 4 members & scopes.

WHAT ASTRONOMY MEANS TO US

Studying the night sky helps us find our place in time and space. Astronomy has existed for as long as humans have lived on the earth. Early man looked to the sky and noticed how heavenly bodies moved in predictable patterns. The patterns of stars also helped them identify where they were on their planet. You can find this on the 1st page of our web site.
QUADRANTIDS METEOR SHOWER

In 2017, the first major shower of the year, the Quadrantids, will peak on the night of January 3 and early morning hours of January 4. The Quadrantids peak around Jan 3 to 4. A **First Quarter Moon will make for good viewing conditions.** Astronomers suggest that observers try their luck after nightfall January 3 to 4.

Are you situated on Earth to see Canopus?

**What is that bright star below Sirius?**

Pronunciation (kah-NO-pus). At the 30° latitude, Beaumont, we can see Canopus. It makes its short appearance in the winter skies. Only a little ways above the horizon, this very large & hot star is clearly visible twinkling as the 2nd brightest star behind Sirius in the sky. The star is of an unusual type (a hydrogen-fusing class F giant), with planets. The best time to see Canopus is after 9PM when Sirius is high in the south with a clear horizon of the south. You look straight down from Sirius and some to the right to this star, 313 lys away. Canopus is also called Alpha Carinae, the brightest star in the constellation Carina.

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**Hodges Gardens Star Party**

**March 22 – March 26, 2017**

This is a “heads up” on this star party. It is only 2 to 2 1/2 hours away and only $15. Most of you have never been, so this is the year. Will and others always make it. Make it your year to go. Get observing started in your life, if you haven’t already. Check the web site for details.

**Observing Field**

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**How Accurate is the World Time**

The U.S. Naval Observatory announced last July that a leap second will be added to official timekeeping on December 31, 2016. That means your day and year – and everyone’s day and year – will officially be one second longer.

Leap seconds have been added 26 times since 1972. They’re inserted at the end of the last day of either June or December. The leap second will be added to the world’s clocks at 23 hours, 59 minutes and 59 seconds Coordinated Universal Time (UTC) on December 31. This corresponds to 6:59:59 p.m. Eastern Standard Time, when the extra second will be inserted at the U.S. Naval Observatory’s Master Clock Facility in Washington, DC. (*Earth/Sky*)

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**How Long Does Dark Adaptation Take?**

The human eye takes time to adjust to the dark. But the most important part of **dark adaptation involves chemical changes in the retina.** Don’t expect to see faint objects at their best until 1/2 hr. or more into an observing session. Did you know you have 3 types of rods in your eye, red, green & blue. The red rod makes it possible to read star charts with a red light. The red LED, which means a light-emitting diode, is the best red flashlight. Some observers cover their observing eye, when looking at charts. A good way to improve your dark adaptation is not looking directly at an object, but use averted vision, looking slightly away, and your faint image may pop out for you. (*S&T*)

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**An Astronomy Fact**

When you see Jupiter in the morning, you will see the star Spica below Jupiter. This star is a blue-white star which means it is hotter than our Sun!
Big Science in Small Packages
By Marcus Woo

About 250 miles overhead, a satellite the size of a loaf of bread flies in orbit. It’s one of hundreds of so-called CubeSats—spacecraft that come in relatively inexpensive and compact packages—that have launched over the years. So far, most CubeSats have been commercial satellites, student projects, or technology demonstrations. But this one, dubbed MinXSS ("minks") is NASA’s first CubeSat with a bona fide science mission.

Launched in December 2015, MinXSS has been observing the sun in X-rays with unprecedented detail. Its goal is to better understand the physics behind phenomena like solar flares—eruptions on the sun that produce dramatic bursts of energy and radiation.

Much of the newly-released radiation from solar flares is concentrated in X-rays, and, in particular, the lower energy range called soft X-rays. But other spacecraft don't have the capability to measure this part of the sun’s spectrum at high resolution—which is where MinXSS, short for Miniature Solar X-ray Spectrometer, comes in.

Using MinXSS to monitor how the soft X-ray spectrum changes over time, scientists can track changes in the composition in the sun's corona, the hot outermost layer of the sun. While the sun’s visible surface, the photosphere, is about 6000 Kelvin (10,000 degrees Fahrenheit), areas of the corona reach tens of millions of degrees during a solar flare. But even without a flare, the corona smolders at a million degrees—and no one knows why.

One possibility is that many small nanoflares constantly heat the corona. Or, the heat may come from certain kinds of waves that propagate through the solar plasma. By looking at how the corona’s composition changes, researchers can determine which mechanism is more important, says Tom Woods, a solar scientist at the University of Colorado at Boulder and principal investigator of MinXSS: "It’s helping address this very long-term problem that’s been around for 50 years: how is the corona heated to be so hot."

The $1 million original mission has been gathering observations since June.

The satellite will likely burn up in Earth’s atmosphere in March. But the researchers have built a second one slated for launch in 2017. MinXSS-2 will watch long-term solar activity—related to the sun’s 11-year sunspot cycle—and how variability in the soft X-ray spectrum affects space weather, which can be a hazard for satellites. So the little-mission-that-could will continue—this time, flying at a higher, polar orbit for about five years.

If you’d like to teach kids about where the sun’s energy comes from, please visit the NASA Space Place: http://spaceplace.nasa.gov/sun-heat/

ANOTHER REMINDER = THIS IS FOR THE AUGUST 2017 SOLAR ECLIPSE
This may be the only chance in your lifetime to actually see a Solar Eclipse. I will tell you the club has 5 members, I know for sure, who are traveling to somewhere on the path to observe the event. Along the path, accommodations are hard to find and the closer you get to August, the room price is going up! On the internet there is all kind of info about the path location. Ask about it at the meeting.
THE CONSTELLATION OF AURIGA - In Greek mythology, Auriga is often identified as the mythological Greek hero raised by the goddess Athena. He was generally credited to be the inventor of the four-horse chariot. Auriga is most prominent during winter evenings in the northern Hemisphere, along with the five other constellations that have stars in the Winter Hexgon asterism. The three brightest open clusters are M36, M37 and M38, all of which are visible in binoculars or a telescope, which will resolve individual stars. A cluster with nebulosity next to IC 405, is the Flaming Star Nebula.

DO YOU REMEMBER THE WINTER HEXAGON?

The Winter Hexagon, also known as the Winter Circle, is a prominent winter asterism formed by seven stars prominent in the winter sky. Get out tonight, if clear, and take a look. I would say about 9 p.m. The eastern sky will give you a real treat. These are Rigel in Orion, Aldebaran in Taurus, Capella in Auriga, Castor and Pollux in Gemini, Procyon in Canis Minor, and Sirius in Canis Major constellation. Sirius and Procyon are also part of the Winter Triangle, a smaller asterism that they form with Betelgeuse in Orion. By late January, it is visible around 7 p.m. and reaches its highest point in the sky around 11 p.m. The Winter Hexagon can be seen in the southern sky early in the evening in late February and early March.

Far side of the Moon, very different from the front

The far side of the Moon is the hemisphere of the Moon that’s always facing away from Earth. The far side’s terrain is rugged, with a multitude of impact craters and relatively few flat lunar maria. Although both sides of the moon experience two weeks of sunlight followed by two weeks of night, the far side is also referred to as the dark side of the Moon. The “far side” remained unobserved until 1959, when the Soviet Union’s Luna 3 space probe photographed it. In 1968, the Apollo 8 mission’s astronauts were the first humans to view this region directly when they orbited the Moon.

China’s Information Office of the State Council recently released a paper on that country’s space activities in 2016. The document also looked at China’s space agenda for the coming years, that includes a lunar sample-return mission and the first soft-landing on the far side of the moon in 2018.

People have been sending robotic spacecraft back to the moon taking HD pictures ever since. Not surprisingly, with the advancing technology, the view has cleared up a lot. The Japanese orbiter Kaguya has captured some nice views with its HDTV camera. Also today, there’s an even more powerful orbiting platform flying day and night over the moon. The high-resolution cameras on board the Lunar Reconnaissance Orbiter. They are so sharp-eyed they can make out features smaller than a meter across.
WHAT’S HAPPENING IN THE SOLAR SYSTEM!
WHERE ARE THE PLANETS?

What’s the brightest and greatest in the sky in January? It’s VENUS! VENUS reaches its highest in the western sky on January 12th. By then it will be an amazing –4.7 magnitude and reach 30” in diameter and appear as a quarter moon in the telescope. MARS will be easy to find to the upper left of Venus and as you get the StarGazer on Jan. 2nd, maybe the 1st, get out and see the crescent Moon in between the two. Get out your scope on the driveway and on the 1st or 2nd, the 8th magnitude NEPTUNE will be right next to Mars in the telescope (in the same field of view, fov). The brightness of Mars is +1 and moving toward Venus. URANUS is in Pisces and high enough to view. January will be your last chance before it gets into the western glow. Now JUPITER has worked its way to rising in the middle of the night and will be in position for very good viewing, in the morning hours. Its magnitude has increased to -2 magnitude. Jupiter is in Virgo and close to Spica. SATURN AND MERCURY have slipped past the SUN into the early morning sky. By the end of January they will both be in position in the dawn sky to view before the Sun comes up. Mercury is in Sagittarius and Saturn in Scorpius. The MOON at the beginning of January is in with Venus and Mars and by the middle of the month is passing Jupiter, and by the end of the month it has looped around again to Venus and Mars. QUADRANTIDS meteors will peak on the night of January 3rd and early morning hours of January 4.