ASSET NewsLetter
Stargazer
Astronomical Society Of South East Texas
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AUGUST 2015 ISSUE

ASSET August Meeting
Friday The 14th, 7:00 PM
You All Come Out For Our Pre-Meal at 5:15PM
Red Lobster near I-10 & Eastex Freeway

Brenda's Minutes
ASSET Minutes    July 10, 2015
Jane filled in for Brenda, who was unable to come. Kyle conducted the meeting for Will, who was out of town. Visitors were introduced. Mitch and Donna Singer from Orange were visiting and then later joined ASSET. Welcome! There were no officer comments. Our new website was discussed and Kyle showed us how to access the various features. Comments were very positive. There are more areas that will be developed. Under observing events: Venus and Jupiter will be passing each other (in conjunction) about mid-month. Also, the Blue Moon will occur on July 31. This happens when there are two full moons during the same month. Justin wasn't present for a comet report. He is revamping his Professor Comet website. Kyle showed some videos including one that reviewed dark sky sites. Also he showed a video on the electric universe. This included data of the asteroid Vesta taken by the Dawn Spacecraft. Thank you Mary and Bill Dixon for refreshments. Cat and Eddie are signed up for refreshments in August. Attendance 17

Will's Words
Wow the weather sure has shifted. The skies at night seem to have opened up a bit and the evenings are nice and warm. Have you been out observing? Jupiter and Venus are still doing their dance over in the western sky just after sunset. It's been fun to watch the two as they move from our perspective. Retrograde motions are pretty fascinating. Have you been to our website lately? If not, hop on over and see what you think. Heather has done an amazing job cleaning things up and getting stuff organized. We now have an active calendar and much more! We’ve also had to move the September and October meeting dates due to the Okie-Tex and Eldorado star parties. September 4th will be the Friday we meet in September and we will meet on October the 16th for our October meeting. Check the Events section for more details.

Will.
JULY NAKED EYE OBSERVATIONS BY JANE & HOWARD

July kicked off with the Jupiter, Venus conjunction. We watched each evening to see how close they would get to each other. We sometimes used our 12X36 Canon Stabilization Binoculars, which will just show the Venus Crescent. They are great for the sky! We watched 2 Full Moons in July and the 2nd is what? A “Blue Moon!” On the 18th, the thin crescent Moon was right below Venus. Very neat! The Big Dipper is now sliding down the left side of the North Star, and the handle arcs to Arcturus, straight overhead. Arcturus is the 4th brightest star in the sky. We noticed the Summer Triangle (Vega, Deneb & Altair) is rising in the East. And of course, Saturn is shining high in the South. We really enjoy just taking a few minutes to look up! As the sky darkens, find a new constellation and enjoy.

Jane & Howard

TRYING TO FIND COMET “2014 Q1 PANSTARRS” Well it is right there; can’t you see it?
In July this comet graced our skies and got up to 5th magnitude and promised to be special. But not to our eyes. Jane and I tried to observe it 2 different evenings, but with no success. Lonnie also tried, with no luck, but we all were using binoculars. Next we changed to small telescopes. Lonnie & Janie and Jane & I made a special trip to where we had a clear western horizon, off 366 in Port Neches. The window to spot the comet was from 8:45 to 9:15, on Saturday evening the 26th. Well we did have pollution along the horizon, up 5° or so, plus there was other light pollution, and it was not dark enough either, so it made it impossible to see.
Anyway we had an enjoyable evening of viewing the Moon, Saturn, Jupiter, and the Venus crescent. It was comfortable, temp wise, with very few mosquitos. Lonnie had his 6’’ reflector he built, and it is a fantastic telescope. The mechanics of it are perfect and it has great mirror quality. So easy to set up too.

Jane & Howard

Purbach’s X Visible This Month - This update by Roger Dillon
A feature on the moon known as Purbach’s X (aka Purbach Cross, Werner Cross or Lunar X) is visible several times a year.
Purbach’s X is at the conjunction of three craters; La Caille, Blanchinus and Purbach (the latter named for Georg Purbach, a 15th century astronomer sometimes called the father of western mathematical and observational astronomy).
The feature is an x-shaped illumination effect involving the rims and ridges at this conjunction when they are near the terminator. These rims and ridges are higher than the surrounding area near the terminator so they are lighted and appear as an “X”. The feature is only visible for about four hours. Visibility starts about 18 hours and 21 minutes prior to First Quarter moon.

The moon feature known as Purbach’s X will be visible starting Friday, August 21 at 8:11 PM. Sunset on that date is at 7:51 PM, civil dusk is at 8:17 PM, nautical dusk is at 8:47 PM and astronomical dusk is at 9:17 PM.
Therefore viewing of Purbach’s X should be good after about 8:30 PM and as late as midnight.

Thanks, Roger
Monthly Update of NASA’s Dawn Mission

July 17, 2015 - Dawn Maneuvering to Third Science Orbit

NASA’s Dawn spacecraft is using its ion propulsion system to descend to its third mapping orbit at Ceres, and all systems are operating well. The spiral maneuvering over the next five weeks will take the spacecraft to an altitude of about 900 miles (less than 1,500 kilometers) above the dwarf planet. By the end of the day on July 17, Dawn will have descended to an altitude of about 2,400 miles (3,900 kilometers). After arrival at its next mapping orbit—called the High-Altitude Mapping Orbit, or HAMO—in August, Dawn will begin taking images and other data at unprecedented resolution. (Info from JPL/NASA web site.)

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PERSEID METEOR SHOWER AT ITS BEST

GET READY FOR THIS ONE! The 2015 Perseid meteor shower is underway through August 26, with activity peaking around August 12 and 13, or the morning of the 14th. Most meteors you see now are Perseid’s. Undoubtedly, the best time to view is from midnight to dawn, the 14th. Also there is no Moon to contend with, which is fantastic and a rare opportunity.

Here are some other tips to get the most out of your meteor shower-watching experience:

1. Find an open location away from bright city lights.
2. Bring something comfortable to sit or lie down on and mosquito spray.
3. Give your eyes time to adjust to the darkness.
4. Be patient. The meteors will come.
5. Don’t use telescopes or binoculars. This is a naked eye event.
6. The meteors will be coming out of the NE and shooting to the South, West, and Northwest and be looking up, or guess what; you will miss a good one?

Howard

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Horizons Makes Closest Approach to Pluto in Historic Flyby

The images – which are still coming in and will continue to arrive at Earth over the coming 18 months – show detail within the Texas-sized plain (informally named Sputnik Planum) that lies within the western half of Pluto’s heart shaped region known as (Tombaugh Regio). There, a sheet of ice clearly appears to have flowed—and may still be flowing—in a manner similar to glaciers on Earth. Pluto’s icy plains have two mountain ranges, and a region where it appears that ancient, heavily-cratered terrain has been invaded by icy deposits.

NEW MEMBERS JOINING THE CLUB - MITCH AND DONNA SINGER

They will be at the August ASSET meeting, so be sure to get by and welcome them. They live in Orange and are new to Astronomy, but want to learn quickly and pick our brains so they can buy the right telescope for them. They may get too much info, if I know our group.
Throughout the past few months, Venus and Jupiter have been consistently the brightest two objects visible in the night sky (besides the moon) appearing in the west shortly after sunset. Jupiter is the largest and most massive planet in the solar system, yet Venus is the planet that comes closest to our world. On June 30th, Venus and Jupiter made their closest approach to one another as seen from Earth—a conjunction—coming within just 0.4° of one another, making this the closest conjunction of these two worlds in over 2,000 years.

And yet throughout all this time, and especially notable near its closest approach, Venus far outshines Jupiter by 2.7 astronomical magnitudes, or a factor of 12 in apparent brightness. You might initially think that Venus’s proximity to Earth would explain this, as a cursory check would seem to show. On June 30th Venus was 0.5 astronomical units (AU) away from Earth, while Jupiter was six AU away. This appears to be exactly the factor of 12 that you need.

Only this doesn't explain things at all! Brightness falls off as the inverse square of the distance, meaning that if all things were equal, Venus ought to seem not 12 but 144 times brighter than Jupiter. There are three factors in play that set things back on the right path: size, albedo, and illumination. Jupiter is 11.6 times the diameter of Venus, meaning that despite the great difference in distance, the two worlds spanned almost exactly the same angular diameter in the sky on the date of the conjunction. Moreover, while Venus is covered in thick, sulfuric acid clouds, Jupiter is a reflective, cloudy world, too. All told, Venus possesses only a somewhat greater visual geometric albedo (or amount of reflected visible light) than Jupiter: 67 percent and 52 percent, respectively. Finally, while Venus and Jupiter both reflect sunlight toward Earth, Jupiter is always in the full (or almost full) phase, while Venus (on June 30th) appeared as a thick crescent.

All told, it's a combination of these four factors—distance, size, albedo, and the phase-determined illuminated area—that determine how bright a planet appears to us, and all four need to be taken into account to explain our observations.

Don't fret if you missed the Venus-Jupiter conjunction; three more big, bright, close ones are coming up later this year in the eastern pre-dawn sky: Mars-Jupiter on October 17, Venus-Jupiter on October 26, and Venus-Mars on November 3.

Keep watching the skies, and enjoy the spectacular dance of the planets!

Check out Gary Roberston’s Observing Article - His report was a little lengthy for the space, so here is a condensed version. Hi Howard, I have been out observing several times this month just taking in the sights with binoculars. On July 16, at 4:00 a.m. I was up, and stepped outside to look around the sky with my 8x40 binoculars. The space station (ISS) was due at 4:09 a.m., which I was able to see 20 degrees above north to 20 degrees above northeast. I checked out Andromeda, then went to Cygnus to see if the North American nebula was visible, and there it was. While looking at the nebula a satellite went through my field of view! I followed it for about 40 degrees with my binoculars.

(continued across on page 5)
FOR YOU ADVANCED OBSERVERS - BARNARD 92 AND 93

As you know B92 & B93 lie in the Sagittarius Star Cloud (M24), which are two prominent dark nebulae. They are obvious to us only by how they blot out the otherwise rich field of stars here. Barnard 92 is the darker of the two, appearing like a large round hole in space, nearly devoid of stars. If there wasn't so much obscuring dust, the Milky Way would appear continuous, rich with stars! B92 is quite prominent at medium powers. Barnard listed the opacity of B92 as 6 out of 6, with 6 being the very darkest nebula. B93 isn't quite as obvious, but still good in the telescope. You can make out a long streak of darkness running roughly north/south. B92 is more well defined than B93, which is less opaque with a more cometary appearance. B92 has a 12th magnitude star near its center and a 8th mag. Star just to the left. B93’s main body trails south from the defined circular 2’ diameter black hole on its northern edge. Of course, as you can tell, you need to be away from Beaumont and at a dark sky site. Get after it.

•MORE ADVANCED INFO ON ABELL 78 –

The Abell Catalog of Planetary Nebulae was created in 1966 by George Abell. It was composed of 86 entries thought to be planetary nebulae that were collected from discoveries by Albert George Wilson, Abell, Robert George Harrington, and Rudolph Minkowski. All were discovered before August 1955 as part of the National Geographic Society - Palomar Observatory Sky Survey on photographic plates created with the 48-inch (1.2 m) at Mount Palomar. There has been recent news on Abell 78 about how its life and death is proceeding. Like planetaries, a central star, maybe like our Sun, expands or blows off its outer shell after exhausting its nuclear fuel. Of course, this matter becomes the nebula surrounding the star and the star itself shrinks to become a white dwarf. The early astronomers coined the name “planetary” nebula, from its round shape, like the Ghost Of Jupiter in Hydra. Now a resurgence of life is being seen in the above image. It is rare that there are such stars that may be coming back to life. However, the resurgence to life seen in this image is an exceptional event for a planetary nebula. But apparently some of the star’s outer layers became so dense that fusion of helium has started up again. There is another planetary that revitalized itself, Abell 30. Abell 78 is a planetary nebula located in the constellation of Cygnus and is 1.4 light years across, with a magnitude of the central star of 13.2.

(continued from page 4) I moved back to Cygnus to see Alberio. Sadly it does not light up with these binoculars. Scanning around, what popped into view but the coat hanger! The coathanger always brings a smile when it comes into view because there can be no doubt about what it is. On the evening of the 18th, a thin crescent moon appeared almost next to Venus, and what an awesome sight with the moon, Venus and Jupiter all within a few degrees. I took a picture and here it is.

I’ll see you all at the meeting, Gary
### August 2015

#### What’s Happening in the Solar System?

**Where are the Planets?**

The disappearing planets in August are **Venus** and **Jupiter**. They are headed for the morning sky. During early August these bodies stay close together very low in the western sky till they disappear. **Mercury** is slowly rising in the west in early August. On August 7th, in the west, Jupiter, Regulus and Mercury will be within 1° of each other. Mercury continues to get higher the rest of the month.

Now **Saturn** takes center stage with its many moons. It stays in eastern Libra and the rings are tilted at 24° and Saturn’s globe casts a shadow on the rings accentuating the planet’s three dimensionality. **Mars** is rising 70 minutes before the Sun in the morning sky. Mars is a 2nd magnitude object and is as tiny as Uranus in the telescope. By the 3rd week of August it will be very near M44, the Beehive Cluster in Cancer. Now **Uranus** is in Pisces and the early morning sky, but it is high enough to view and study. Also binoculars is all you need to see Uranus. **Neptune** is very high in the morning sky and reaches opposition on August 31st. Neptune is at +7.8 magnitude and the disk size is 3.7". With the Perseids meteor shower on the early morning of Aug. 14th, a morning star party would be fun, seeing the planets and the meteors. **Pluto** is the planet of the summer with the “New Horizons” fly by. Pluto is in northern Sagittarius and in perfect position to view. The July issue of S & T has a star map to find it in the telescope. It will take, at least a 10 or 12" scope to see the faint speck of light from it.

The **Perseid Meteor Shower** takes center stage the night of the 13th and morning of the 14th. *No moon this year to block it out.* This year the shower should be at its best. Read the Perseid article.

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### Calendar

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- **Moon closest to Earth, Perigee**
- **Moon farthest from Earth, Apogee**
- **URANUS 1° NORTH OF MOON**
- **JOHN FLAMSTEED BORN IN 1646**
- **JUPITER IN CONJUNCTION WITH SUN**
- **VENUS AT INFERIOR CONJUNCTION**
- **ASSET CLUB MEETING 7:00PM**
- **THE PERSEID METEORS PEAK AT 4 AM ON THE 14TH**
- **THE NEW MOON IS ON OUR CLUB NIGHT ON THE 14TH**

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**Asset Club**

Meeting Night: 7:00 PM

**August 2015**

**John Flamsteed**

Born in 1646
This is a fun star party. Check out the web site and ask about it at the August Meeting.

We have members going, so let’s make it a great week of observing.

The bigger the group that goes, the more fun it gets.

*Okie-Tex WIFI Information and Terms of Use

*Requires Adobe Acrobat

Online Registration.

When using Online Registration, you have two payment methods. First is to fill in the info and print out a form and mail it in with your check. Your totals will be automatically figured. Second is to pay through PayPal. You do not need a PayPal account to use PayPal. They accept credit cards without an account. There is a surcharge (2.2% + $.30) added to your registration if you use PayPal. This is to cover their charges. To use Online registration, you must have JavaScript enabled. It is tested to work on the following browsers: Firefox, Internet Explorer, and Netscape. If you have another browser that you know it works on please let the Webmaster know, and I’ll add it to the list.

Pre-Registration and Fees

The pre-registration fee is $50.00 for each primary registrant and $25.00 for each additional family member 18 years old or older. Children under 18 are admitted free of charge.

Only primary registrants are eligible for the Great Okie-Tex Giveaway (click here for details on the giveaway). Adult guests may register as primary registrants for $50.00 if they wish to be eligible in the giveaway or may upgrade their registration for $25.00 at the party by checking in at the registration desk at anytime prior to the giveaway.

Pre-registration submissions must be post-marked no later than August 24, 2015 and must be paid in full. Online Registrations must be completed and paid in full by midnight CDT that evening.