Next Meeting: Monday, Sept. 12th at 7PM at HRPO
(2nd Mondays, Highland Road Park Observatory)

What's In This Issue?

Due to the 1000 Year Flood in Louisiana beginning August 14, some of our club’s activities were curtailed, thus our newsletter is shorter than usual.

President’s Message

Secretary's Summary for August (no meeting)

Light Pollution Committee Report

Outreach Report
Photo Gallery

20/20 Vision Campaign

Messages from the HRPO
Triple Conjunction with Moon

Observing Notes: Capricornus – The Sea Goat, by John Nagle & Mythology
BRAS President’s Message

This has been a month of many changes for all of us. Some have lost almost everything in the flood, some have lost a little, and some have lost nothing... Our hearts go out to all who have lost, and thanks to all who have reached out to help others.

Due to the flooding, last month’s meeting, at LIGO, was cancelled. The September meeting will be on the 12th at the Observatory, which did not receive any water during the flood, thus BRAS suffered no loss of property.

As part of our Outreach effort. If anyone you know has any telescope and/or equipment that was in water during the flood, let us know and we will try to help clean, adjust, etc. the equipment.

On September 2nd (I am a little late with this message), Dr. Alan Stern, the New Horizons Primary Investigator, gave two talks at LSU. The morning talk was for Astronomy graduate students, and was a little technical. I attended and enjoyed it very much. The afternoon talk was geared more for the public, and was well attended (about 40). I attended this talk also, sitting with Dr. Landolt. After the talk, Ben Toman and Scott Louque, who had sat further back from me, came up and we “did the nines” with Dr. Stern (see photo). As Dr. Stern explained, Planetary Scientists still and have always considered Pluto a “planet”, not a “dwarf” or “minor” planet. Hence, “doing the nines”.

We have some outreach events this month, and still need some volunteers for them. Look over the Outreach section in this newsletter, and volunteer if you are able.

Clear Skies,

John R. Nagle
President of BRAS
Observing Chairperson

L to R: Scott Louque, John Nagle, Dr. Stern, Ben Toman
“Doing The Nines”
Hi Everyone,

Obviously, since our meeting at LIGO was cancelled for August, there are no Secretary notes or minutes to report.

But . . . .

I am happy to report that the LIGO facility did not take on water although many of its surrounding neighbors did. It would have been a horrible blow if the facility had flooded so soon after its recent upgrades and discoveries. As far as we know, they are still on track for beginning another data run this fall.

Our guest speaker for the September meeting will be Dr. Ed Shihadeh of LSU. We're lucky enough to host Dr. Shihadeh every several years or so and he gives an amazing presentation on large scale model rocketry including information on where you can go in Louisiana to see launches in person. Some of these rockets are several feet tall and travel miles up into the sky. Be sure to come check it out as it's always a fun one.

**BRAS helps with cleaning and recovery of observing equipment.**

Finally, if you or anyone you know had observing equipment caught up in the flood waters, don't hesitate to contact BRAS for yourself or on a friend's behalf. We'll do our best to aid in the cleaning and recovery of the equipment. We've already had a couple members helping out by cleaning eyepieces, filters, OTAs and mirrors for other unfortunate members.

Hope to see you all at the meeting in September and continued best of luck with the ongoing recovery process. This time, instead of signing off with the common "Clear Skies" mantra of amateur astronomers, I think it's fitting to sign off with Jack Horkheimer's,

Keep Looking Up!

Ben Toman
BRAS Secretary
Outreach Chairperson
Hi Everyone,

The recent flooding had put thoughts of outreach and stargazing out of mind for a time, but it's time to get back in the saddle! First off, **Friday, September 2nd**, some of us headed over to the **Hill Memorial Library on LSU campus at 2pm** to hear a **FREE** lecture from **Dr. Alan Stern**, the New Horizons Primary Investigator. Later in the evening, some could stop by the **Burbank Soccer Complex** to view the triple conjunction of **Venus, Mercury and Jupiter** with a young Moon thrown in to boot! That started at **5:45pm**.

As far as outreach, we have two events coming up in the next couple of weeks followed by two more in early October. They are as follows:

**Thursday, September 8th, 7:15pm-9:15pm**  
Stargazing at the Luthcer Library (1879 West Main St)  
Telescope observing  
2-3 volunteers needed

**Thursday, September 15th, 7pm-9pm**  
LSU Art Museum (Shaw Center Downtown)  
Cocktails in Color: Sake tasting and Stargazing  
Telescope observing  
3-5 volunteers needed

**Saturday, October 8th, 10am-4pm**  
Baton Rouge Mini Maker Faire  
Main Library  
Demo table and Solar observing  
6-8 volunteers needed

**Tuesday, October 11th, 6:30pm-8:30pm**  
Stargazing at the Vacherie Library (2593 Highway 20)  
Telescope observing  
2-3 volunteers needed

Each of these events should be a lot of fun. I'm especially keen on the Sake tasting, but not too much. Someone's gotta drive the scopes! Please let me know **ASAP** if you are able and willing to help out with any of these events. I know some of our regular volunteers are still dealing with flood aftermath, so now is the time to step up if this would be your first time. We need you!

Clear Skies,

Ben Toman  
Outreach Chairperson
BRAS Light Pollution Committee Report
Monday, 12 September from 7pm to 8:30pm

One does not need to be a BRAS member to attend.

There was no meeting in August due to the flood.

Thomas Halligan
Light Pollution Chairperson

No BRAS Event Summaries for August, BUT. . . . .

Your BRAS event photos can go here. So

snap. snap. snap.

Got one or more
BRAS event photos?
Send them to newsletter@brastro.org,
attn Michele,
with a caption,
preferably by the 26th of the month for
inclusion, (space permitting), in this
newsletter.
Cite photographer’s credits too.
BRAS’s 20/20 Vision Campaign

GLOBE at Night: until 2 Sep, then 22 Sep to 1 Oct
2016 GOAL: 200 Measurements. CURRENT: 45

OBSERVATIONS NEEDED FOR SCHOOL PROJECT

BRAS is in the process of assisting a student at St. Joseph’s Academy acquire raw data. She needs descriptions of views of five Messier objects—Pleiades, Orion Nebula, Andromeda Galaxy, Beehive Cluster, Whirlpool Galaxy—together with date and time, and the observing location’s GaN measurement and quality of view. Parameters have been set defining whether each observation yields a poor, good or excellent view. An alert will also be sent out describing this exercise. The student needs very much this information with at least three sky views (different limiting magnitudes). The observation parameters for this project are as follows...

**M45 [Pleiades]**
- Poor View: fifteen stars or fewer seen.
- Good View: sixteen to twenty-nine stars seen.
- Excellent View: thirty or more stars seen.

**M44 [Beehive Cluster]**
- Aperture: 50mm – 70mm. Magnification: 10x – 25x.
- Poor View: indistinct blob seen.
- Good View: at least ten distinct stars seen.
- Excellent View: eleven or more distinct stars seen.

**M31 [Andromeda Galaxy]**
- Aperture: at least 80mm. Magnification: 20x – 40x.
- Poor View: only core of the galaxy seen.
- Good View: arms of the galaxy seen.
- Excellent View: galaxy’s companion (M32) seen.

**M51 [Whirlpool Galaxy]**
- Aperture: at least 8”. Magnification: 25x – 50x.
- Poor View: indistinct blob seen.
- Good View: arms of the galaxy seen.
- Excellent View: galaxy’s companion (NGC 5195) seen.

**M42 [Orion Nebula]**
- Aperture: at least 80mm. Magnification 60x – 100x.
- Poor View: only Trapezium (the four brightest stars) seen.
- Good View: fifth star seen.
- Excellent View: sixth star seen.

Observations should only be made when the Moon is below the horizon. Each observation should include the location’s GLOBE at Night measurement or SQM measurement. Use all of these parameters to report your results to observatory@brec.org.

NOTE: Ms. Angelle needs these measurements to compliment out the data she has gathered. Use any opportunity to take at least one or two measurements.

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FRIDAY NIGHT LECTURE SERIES
all start at 7:30pm

9 September: “The Perseid Report” (Postponed from 19 August) This brief presentation will summarize the successes and failures of this year’s Perseid peak monitoring across the globe. [Postponed from 19 August.]

16 September: “The Amazing Voyage of Deep Space 1” It’s true….it really happened. The astounding “little spacecraft that could” had three modest goals among many—visit an asteroid, visit a comet and test the possibility of ion propulsion! As more and more distance separated the diminutive machine from its home planet, and one of its critical instruments failed, could it accomplish everything it was meant to do?

23 September: “Uranus and Neptune” One has an incredible tilt, the other has the strongest wind gusts in the Solar System! The farthest gas giants are described, with their moons and missions.

30 September: “Journeys to the Moon” Since antiquity, humankind has been voyaging to the Moon with imagination and curiosity. This presentation introduces the beginner to making his or her own observations. Neither a rocket nor a spacecraft is required!

SCIENCE ACADEMY
Saturdays from 10am to 12pm
For ages eight to twelve. $5/$6 per child.

- 3 September: “Gamma Rays, X-Rays and Ultraviolet”
- 10 September: “Visible Light”
- 17 September: “Infrared, Microwaves and Radio Waves”
- 24 September: “Expedition 11”

ONE-TIME CALLS FOR VOLUNTEERS

- Friday 2 September, 5:45pm to 7:45pm. Two or three volunteers. Triple Conjunction with Moon. Telescope operation. Moderate difficulty.
- Thursday 8 September, 3:30pm to 6:30pm. Two or three volunteers. OSIRIS-REx Launch Party. Telescope operation, physical science demonstrations, games. Easy to moderate difficulty.
- Saturday 24 September, 7pm to 10pm. Two or three volunteers. Evening Sky Viewing Plus. Telescope operation, physical science demonstrations. Easy to moderate difficulty.
ONGOING CALL FOR VOLUNTEERS

HRPO periodically needs BRAS volunteers for crafting (gluing, cutting, painting, etc.); training is offered for these easy to moderate tasks. We also have plenty of “grunt work” to go around in preparation for ARRL Field Day. Finally, we would more than welcome any who can help for at least one or two hours anytime during Fall Rocket Camp. We are asking any BRAS volunteers with time to assist. Thank you.

UPCOMING HRPO EVENTS
(click links for more detailed info)

Triple Conjunction with Moon

Friday, 2 September from 5:45pm to 7:45pm
at the Burbank Soccer Complex
No admission fee. For all ages. Binocular recommended.

This astounding sight is a “one night only” thrill. Three planets will form a fairly large triangle (Mercury and Venus will be as far apart as possible for its proximity to still earn the label “conjunction”). The accompanying Moon will only be a scant 1.5 day-old—certainly some sort of vision test!

Please mark your calendars now:
the next International Astronomy Day
is 29 April 2017, again from 3pm to 11pm.

What women have to say about it!

THE IDEA OF A MULTIVERSE MAKES ME UNCOMFORTABLE

... IT’S HARD ENOUGH BEING THE CENTER OF ONE UNIVERSE.
Named Stars:

**Algedi Prima (Alpha¹ Cap)**, “Prima Giedi”, “al-jady”, “the billy goat”, mag. 4.30, 20 17 38.86 -12 30 29.6, is a yellow-hued supergiant star, and is part of an optical binary with Alpha² Cap. Alpha¹ Cap is a binary star with a companion at mag. 9.2 and a separation of 0.65 arc seconds (shades of Dune, again!). Alpha¹ and Alpha² are separated by 0.11 degrees.

**Algedi Secondus (Alpha² Cap)**, “Secundi Giedi”, “al-jady”, “the billy goat”, mag. 5.38, 20 18 03.22 -12 32 41.5, is a yellow-hued giant star, and is also a multiple star with a companion star of mag. 11, which in itself is a binary star with its second component also at mag. 11.

**Dabih Major (Beta¹ Cap)**, “the butcher”, “al-dhâbih”, is a binary system. Beta¹ Cap, mag. 3.05, 20 21 00.65 -14 46 53.0, is an orange-hued giant star, with three companions. There are two blue-white main sequence dwarf stars of mag. 7.20. Separation of primary to 2nd star is 0.05 arc seconds and has an orbital period of 3.77 years. The third star orbits the second every 8.7 days.

**Dabih Minor (Beta² Cap)**, “the butcher”, “al-dhâbih”, mag. 6.09, 20 20 46.52 -14 47 05.6, is a blue-white hued star, with a companion that has an atmosphere unusually rich with mercury and manganese. Beta² Cap is separated from Beta¹ Cap by 3.5 arc minutes, or 0.34 light years, and completes one orbit every 700,000 years.

**Nashira (Gamma Cap)**, “the bearer of good news”, mag. 3.69, 21 40 05.34 -16 39 44.10, is a blue-white giant star, classified as an Alpha² Canum Venaticorum type – a chemically peculiar star with strong magnetic fields.

**Deneb Algedi (Delta Cap)**, “Sheddi”, “danab al-jady”, “the tail of the goat”, mag. 2.85, 21 47 02.29 -16 07 35.6, is a four star system. Delta Cap A is a white giant star, with the system being a spectroscopic binary, whose two components are of mag. +3.2 and +5.2, separated by 0.0018 arc seconds. Delta Cap A is also an eclipsing binary, with its unresolved companion orbiting every 1.022768 days. Two other stars are thought to orbit further out in the system. Delta Cap C, at 16th magnitude, is separated from the primary by one arc minute, while Delta Cap D, at 13th magnitude, is two arc minutes away from the primary star.

**Kastra (Epsilon Cap)**, mag. 4.51, 21 37 04.82 -19 27 57.6, is a triple star system.

**Marakk (Zeta Cap)**, “loins”, mag. 3.77, 21 26 40.03 -22 24 41.0, is a double star composed of a yellow supergiant star and a white dwarf star. The primary is a Barium star that is particularly notable for having an overabundance of praseodymium.

**Armus (Eta Cap)**, mag. 4.82, 21 04 24.32 -19 51 17.8, is a star in Capricornus.

**Dorsum (Theta Cap)**, “the back of the goat”, mag. 4.08, 21 05 56.78 -17 13 57.8, is a white main sequence dwarf star.

**Kuh (Mu Cap)**, mag. 5.07, 21 53 17.58 -13 33 06.5, is a suspected variable star.

**Alshat (Nu Cap)**, mag. 4.77, 20 20 39.81 -12 45 32.6, is a star in Capricornus.

**Okul (Pi Cap)**, mag. 5.08, 20 27 19.20 -18 12 42.1, is a double star with a blue-white primary and a white-hued secondary at mag. 8.3.
Bos (Rho Cap), mag. 4.77, 20 28 51.62 -17 48 49.2, is a star in Capricornus.

Baten Algiedi (Omega Cap), “the belly of the goat”, mag. 4.12, 20 51 49.30 -26 55 08.9, is a red giant variable star.

Deep Sky:

M 30 (NGC 7099), “The Jellyfish Cluster”, mag.7.5, 21 40.4 -23 11, 9’ in size, is a globular cluster, with a medium concentration of stars; bright, large, slightly elongated. Brightest stars in the cluster are mag. 12 red giant stars. Having suffered a core collapse, the core is now only 0.12 arc minutes in size. Located about ¾° south and 3° east of Zeta Cap, or 25’ west and slightly north of mag. 5.5 41 Cap. A point-like ultra-violet source was discovered in 1983, but was found to be a post-red giant star beginning to evolve toward the white dwarf cooling sequence.

There are 18 NGC and 11 IC objects beyond mag. 10, see me for a listing.

Other Stars:

Psi Cap, mag. 4.13, 20 46 05.77 -25 16 13.9, is a yellow-white giant star.

46 Cap, mag. 5.10, 21 45 00.25 -09 04 56.7, is a part of Sa’d al Su’nd.

41 Cap, mag. 5.24, 21 42 00.64 -23 15 45.5, is a double star with magnitudes of 5.3 and 13.0.

HD 192310, mag. 5.73, 20 15 16.58 -27 01 57.1, is a suspected variable star with two planets in orbit.

Omicron Cap, mag. 5.94, 20 29 53.89 -18 34 58.7, is a binary star, with Omicron Cap B, at mag. 6.74, 20 29 52.58 -18 35 10.2.

HD 204313, mag. 7.99, 21 28 12.21 -21 43 34.5, has three planets in orbit.

HD 202206, mag. 8.08, 21 14 57.77 -20 47 21.15, has a brown dwarf star and a planet in orbit.

HD 204941, mag. 8.45, 21 32 24 -20 57 27, has a planet in orbit.

Σ 2699, mag. 8-9?, 20 34.2 -12 55

HD 197027, mag. 9.15, 20 41 54.63 -27 12 57.4, is a solar twin.

PSR B2045-16, 20 48 35.45 -16 16 43.0, is a pulsar star.

There is one star of note beyond mag. 10, see me for it.

Sky Happenings: September, 2016

(what follows pertains ONLY to the current month.  Material above is good year after year.)

Sept. 1st - New Moon occurs at 4:03 AM CDT,
Annular eclipse of the Sun is visible in central Africa along a line from Gabon to Madagascar.

Sept. 2nd - Asteroid Ceres is stationary at 8 AM CDT,
Neptune is at opposition at 12:00 noon CDT,
The Moon passes 6° north of Mercury at 12:00 noon CDT,
The Moon passes 0.4° north of Jupiter at 5 PM CDT.

Sept. 3rd - The Moon passes 1.1° north of Venus at 6 AM CDT.

Sept. 4th - The waxing crescent Moon is low in the west with Spica about 5° to its lower left.

Sept. 6th - The Moon is at apogee (251,689 miles from Earth) at 1:45 PM CDT.

Sept. 8th - The Moon passes 4° north of Saturn at 4PM CDT,
Evening – The Moon, just shy of first quarter, is some 3°-4° above Saturn. Brighter Mars flames 9° to the left of Saturn, while red Antares twinkles 6° below and a bit left of Saturn.

Sept. 9th - First Quarter Moon occurs at 6:49 AM CDT,
The Moon passes 8° north of Mars at 9 AM CDT.

Sept. 12th - Mercury is in inferior conjunction at 7 AM CDT.
Sept. 15th - The Moon passes 1.2° north of Neptune at 3 PM CDT.
Sept. 16th - Full Moon occurs at 2:05 PM CDT, Evening to Night – A fairly deep penumbral lunar eclipse is visible from Europe, Asia, Africa, and the Pacific.
Sept. 17th - Venus passes 3° north of Spica at 6 PM CDT.
Sept. 18th - The Moon is at perigee (224,872 miles from Earth) at 12:00 noon CDT, The Moon passes 3° south of Uranus at 12:00 noon CDT.
Sept. 21st - Mercury is stationary at 5 AM CDT, The Moon passes 0.2° north of Aldebaran at 6 PM CDT.
Sept. 22nd - Autumn begins (Autumnal Equinox) in the Northern Hemisphere at 9:21 AM CDT.
Sept. 23rd - Last Quarter Moon occurs at 4:56 AM CDT.
Sept. 25th - Pluto is stationary at 10 PM CDT.
Sept. 26th - Jupiter is in conjunction with the Sun at 2 AM CDT.
Sept. 27th - The waning crescent Moon is about 6° to the upper right of Regulus.
Sept. 28th - Dawn – The zodiacal light or “false dawn” is visible in the east before sunrise from dark locations at north temperate latitudes for the next two weeks. Look for a tall, broad pyramid of light rising up through Leo, Cancer, and Gemini, Mercury is at greatest western elongation (18°) at 3 PM CDT.
Sept. 29th - Dawn – use binoculars to search very low in the east 30 to 40 minutes before sunrise to find the thin crescent Moon less than 2° below Mercury, The Moon passes 0.7° south of Mercury at 6 AM CDT, Asteroid Parthenope is at opposition at 8 AM CDT.
Sept. 30th - New Moon occurs at 7:11 PM CDT.

Planets:
Mercury – Mercury passes between the Sun and Earth at inferior conjunction on September 12th, and the springs into the morning sky 10 days later to start its finest morning appearance of the year. On September 22nd, Mercury appears 8° above the eastern horizon a half-hour before sunrise. Shining at magnitude +0.9, Mercury will show up clearly through binoculars, and to the naked eye once you have spotted it. A telescope will reveal an 8.6” diameter disk that is just 21% lit. On September 28th, Mercury, at greatest western elongation (18°), will shine at magnitude -0.5 and will climb 11° high in the east 30 minutes before sunup. Through a telescope, Mercury appears 7.1” across and is half lit. On September 29th, the Moon slides by 1° below Mercury.
Venus – Watch the western sky during evening twilight to catch Venus, which will climb higher with each passing day. On September 2nd, Venus will be at magnitude -3.8. On September 3rd, the Moon, Venus, and Jupiter form a line spanning some 14°, with Venus midway between the other two. All three lie in Virgo. During Septembers 2nd week, Venus grows more prominent. On the 17th, Venus passes 3° north of Virgo’s brightest star, 1st magnitude Spica. On the month’s final day, Venus exits Virgo and enters Libra.
Jupiter – On the evening of September 1st, Jupiter glimmers 5° to the lower right of Venus, quite low in the evening twilight. On September 2nd, at twilight, a slender two day old Moon is about 1° to Jupiter’s left, with Jupiter shining at magnitude -1.7, with the pair only 4° high in the west a half hour after sunset. On September 3rd, the Moon, Venus, and Jupiter form a line spanning some 14°, with Venus midway between Jupiter and the Moon, in Virgo. Jupiter will slip out of view during the 2nd week of September, passing through superior conjunction with the Sun on September 26th, and so is lost from view until it reappears in the dawn sky in early October.
Saturn – As September dawns, Saturn stands 6° northwest of Mars, shining at magnitude +0.5, as it reaches eastern quadrature (90° east of the Sun). Saturn’s disk spans 16”, with the rings measuring 37” across and at a tilt of 26° to our line of sight. Titan, the biggest and brightest of Saturn’s moons, shines at 8th magnitude and will show up through any telescope. You can find Titan due north of Saturn on September 9th and 25th, and due south of the planet on the 16th. A 4-inch telescope (or larger) will bring in four additional satellites. Iapetus, at 10th magnitude on September 8th, will show its ice-covered hemisphere fully facing Earth. It then lies 8.3° west of Saturn. Iapetus will have faded 1 magnitude when it passes 2.1°
due north of Saturn on September 28th. Titan will lie 2.6’ east of Saturn at this time. Three 10th magnitude moons circle Saturn inside Titan’s orbit. Tethys, Dione, and Rhea all lie within 1’ of the ring’s outer edge and show up on every clear night.

Uranus – Uranus rises as evening twilight fades, and stands high in the southeast at midnight local daylight time. Uranus is in Pisces, and can be spotted with binoculars. Under excellent conditions, a keen eyed observer can spot the 5.7 magnitude planet without optical aid. To find Uranus, start at 5th magnitude Mu Piscium. In early September, Uranus lies 2.5° due north of Mu Piscium. Point your telescope at Uranus and you will see a distinctly blue-green disk measuring 3.7” across.

Neptune – Neptune reaches opposition on September 2nd, rising with the faint stars of Aquarius just as the Sun sets. Neptune shines at magnitude 7.8, and moves slowly relative to the background stars. You can find Neptune with binoculars, in the same field of view as 4th magnitude Lambda Aquarri. Neptune lies 1.3° southwest of Lambda Aquarri at opposition (September 2nd). The gap grows to 2° by late September. A telescope reveals a disk of just 2.4” in diameter, and glows a subtle blue-gray hue.

Pluto – The dwarf planet lies reasonably high in the south-southwest among the stars of northern Sagittarius in the hour after darkness falls. Pluto glows dimly at magnitude 14.3, and you will need an 8-inch or larger telescope to see it visually. Pluto lingers some 0.5° northwest of 4th magnitude Omicron Sagittarii. To confirm sighting, sketch or image view, and return to it a few nights later to identify the object that shifts position.

Sun – On September 1st, the Sun experiences an annular solar eclipse as seen from parts of Africa. The Sun crosses the Autumn Equinox at 9:21 AM CDT on September 22nd, marking the start of Autumn in the Northern Hemisphere and Spring in the Southern Hemisphere.

Moon – On September 2nd, an ultra-thin lunar crescent will slice very near Jupiter soon after sunset. A thicker Moon is well to the upper left of Venus on the 3rd, and above faint Spica on the 4th. The Moon is above Saturn on September 8th, and the far upper left of Mars on the 9th. On September 16th, the Moon undergoes a deep penumbral eclipse visible from much of the Eastern Hemisphere. A waning lunar crescent is just below Mercury at dawn on September 29th.

Asteroids – Asteroid 2 Pallas begins September in east-central Equuleus. It then drops southward, passing just south of three 9th magnitude stars on September 9th. To positively identify 2 Pallas, look for its displacement relative to this background over a night or two. The 325 mile wide asteroid then slides 1° west of 4th magnitude Alpha Equulei on September 11th.

Asteroid 1 Ceres and 18 Melpomene will both fit in the same low power view near the head of Cetus for a few nights around September 7th and 8th. They will be 0.8° apart those nights with Ceres at magnitude 8.2 and Melpomene at 8.8. They remain within 1° of each other from September 5th through the 10th, well up in the east after about midnight. On September 24th, Ceres will be at 69 Cetus, and on the 25th, Melpomene will be about .3° from 75 Cetus.

Comets – Comet 43 P/Wolf-Harrington resides in Cancer during the first half of September. To see this 12th magnitude snowball, you will need an 8-inch or larger telescope and a dark, haze free site with a clear view to the east. On September 9th, 43 P will be about ½° north of 29 Canceri, and on the 14th it will be about 0.5° south of 45 Canceri, and on the 15th it will be about 0.3° south of 50 Canceri.

Meteor Showers – The Aurigids peak the night of August 31 /September 1 and in the early morning hours of the first could deliver up to 6 “shooting stars” per hour. The Epsilon Perseids, which peak on the morning of September 9th, will have the Moon setting before midnight local daylight time, bringing on dark skies before dawn. The Epsilon Perseids radiate from a point near Algol, which climbs nearly overhead just before twilight begins. Observers can expect to see an average of five meteors per hour.
When to View the Planets:

**Evening Sky**
- Venus (west)
- Mars (south)
- Jupiter (west)
- Saturn (southwest)
- Neptune (southeast)

**Midnight**
- Uranus (southeast)
- Neptune (south)

**Morning Sky**
- Mercury (east)
- Uranus (southwest)
- Neptune (west)

Dark Sky Viewing - Primary on September 3rd, Secondary on September 24th

“And now, it is my great pleasure and honor to introduce Professor Dawormski, who will attempt to explain his latest wormhole theory.”
Capricornus – the sea goat

Capricornus is an unlikely looking creature, with the head and forelegs of a goat and the tail of a fish. The constellation evidently originated with the Sumerians and Babylonians, who had a fondness for amphibious creatures; the ancient Sumerians called it SUHUR-MASH-HA, the goat-fish. But to the Greeks, who named it Aegoceros (goat-horned), the constellation was identified with Pan, god of the countryside who had the horns and legs of a goat.

Pan, a playful creature of uncertain parentage, spent much of his time chasing females or sleeping it off with a siesta. He could frighten people with his loud shout, which is the origin of the word “panic”. One of his offspring was Crotus, identified with the constellation Sagittarius. Pan’s attempted seduction of the nymph Syrinx failed when she turned herself into a handful of reeds. As he clutched the reeds the wind blew through them, creating an enchanting sound. Pan selected reeds of different lengths and stuck them together with wax to form the famous pipes of Pan, also called the syrinx.

Pan came to the rescue of the gods on two separate occasions. During the battle of the gods and the Titans, Pan blew a conch shell to help put the enemy to flight. According to Eratosthenes his connection with the conch shell accounts for his fishy nature in the sky, although Hyginus says somewhat absurdly that it is because he hurled shellfish at the enemy. On a later occasion Pan shouted a warning to the gods that the monster Typhon was approaching, sent by Mother Earth (Gaea) against the gods. At Pan’s suggestion the gods disguised themselves as animals to elude the monster. Pan himself took refuge in a river, turning the lower part of his body into a fish.

Zeus grappled with Typhon, but the monster pulled out the sinews from the hands and feet of Zeus, leaving the god crippled. Hermes and Pan replaced the sinews, allowing Zeus to resume his pursuit of Typhon. Zeus cut down the monster with thunderbolts and finally buried him under Mount Etna in Sicily, which still belches fire from the monster’s breath. In gratitude for these services, Zeus placed the image of Pan in the sky as the constellation Capricornus.

The star Alpha Capricorni is variously called Algedi or Giedi, from the Arabic al-jady meaning “the kid”, the Arabic name for the constellation. Delta Capricorni is called Deneb Algedi, from the Arabic for “the kid’s tail”. The tropic of Capricorn is the latitude on Earth at which the Sun appears overhead at noon on the winter solstice, around December 22nd. In Greek times the Sun was in Caprticornus on this date, but the effect of precession means that the Sun is now in Sagittarius at the winter solstice.
The End