

Night Visions

October 2017 Issue

Newsletter of the Baton Rouge Astronomical Society

Next Meeting: Monday, October 9th at 7PM at HRPO
(2nd Mondays, Highland Road Park Observatory)

October Program: BRAS President John Nagle will reveal how he researches and puts together his Observing Notes column for our newsletter each month.

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Like this newsletter? See past issues back to 2009 at
<http://brastro.org/newsletters.html>

President's Message

The first Sidewalk Astronomy of the season was a success. We had a good time, and About 100 people (adult and children) attended. Ben Toman live streamed on the BRAS Facebook page. See his description in this newsletter.

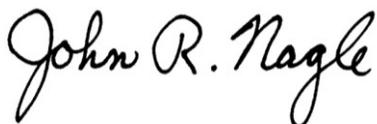
A copy of the proposed, revised By-Laws should be in your mail soon. Read through them, and any proposed changes need to be communicated to me before the November meeting. Wally Pursell (who wrote the original and changed by-laws) and I worked last year on getting the By-Laws updated to the current BRAS policies, and we hope the revised By-Laws will need no revisions for a long time.

We need more Globe at Night observations – we are behind in the observations compared to last year at this time. We also need observations of variable stars to help in a school project by a new BRAS member, Shreya. She will need to turn in her data soon, so please do some observations and send the info to HRPO.

Volunteers needed, as always. HRPO and the BRAS Light Pollution Committee are hosting the first **Natural Sky Conference** on Friday, November 17th, and on Saturday, November 18th, is the **HRPO 20th Anniversary**. We need volunteers to help during these two events.

As announced in last month's newsletter, and at the meeting last month, BRAS has won the **AL/Horkheimer Library Telescope** for South East Region of AL. We have received the telescope and the zoom eyepiece, but modifications need to be done before we can donate it to the Library. I plan for all work to be completed within the next two weeks, and for the donation to be done in early November.

Clear Skies,



John R. Nagle
President of BRAS and Observing Chairperson

P.S. Michele has hidden another Tom Swifty joke in this October newsletter. HINT: It contains the word "Tom". Find it, copy and send it to me (jonagle@cox.net). 1st 3 entries I receive who also come to this month's BRAS meeting get a free raffle ticket). HINT: A **Tom Swifty** is a joke, kind of a play on words. Like, "*Can you find the hidden joke, Tom asked searchingly.*"

P.S. The PAS-sponsored **Star Gaze is October 17th (Tuesday) to October 22nd** (Sunday). You can access the "Deep South Star Gaze Registration and Liability Form by joining this Yahoo group:

<https://groups.yahoo.com/neo/groups/Deep-South-Star-Gaze/info>

If you are already signed up, the form is located here:

https://groups.yahoo.com/neo/groups/Deep-South-Star-Gaze/files/2017%20DSSG%20Registration%20and%20Liability%20Release/DSSG_2017%20Fall%20Registration_and_Liability_Form.pdf



Secretary's Summary of September Meeting

- Meeting opened by President John Nagle
- John announced we won a library scope from the A.L.
- Mention of the A.L. eclipse award deadline
- Mention of new A.L. observing clubs
- RASC handbook (US version) available for preorder
- Bylaws are being updated and will be mailed to members for consideration with a vote in December
- Chris Kersey talked about upcoming Night Sky conference
- Upcoming outreach discussed
- Dues are being accepted for 2018
- Don Weinell announced the closing of Hodges Gardens and the end of the star party there for the time being. The star party at Rockefeller Retreat is on for 2018, though.
- Members and visitors talked about their eclipse experiences. Contributors included: Craig Brenden, Brad Schaefer, Ben Toman, Don Weinell, Rory Bentley, Katie Nugent.
- Raffle held
- Meeting adjourned

Ben Toman, BRAS Secretary (For all the good I'm worth!)



BRAS Outreach Report

Hi Everyone,

First of all, we had a great night on Tuesday, Sept 26th at Perkins Rowe for the return of Sidewalk Astronomy after our Summer hiatus. I would estimate we interacted with around 100 people. We had great weather and beautiful views of Saturn, the Moon and an awesome flyover of the ISS as an added bonus. Thanks to our volunteers for the evening: Chris Kersey, Craig Brenden, John Nagle, Scott Cadwallader, Scott Louque, Bill Arcediano and Ben Toman.

We will be back out there again next month so start thinking about coming out!

Also, we will once again be doing an outreach at the Lutcher Library. We've had a great time there in the past. If you live toward that side of Baton Rouge, you should really try to make it out for a fun time!



At Sidewalk Astronomy, the International Space Station happened to be going by!

Our application to participate in the Baton Rouge Mini Maker Faire was accepted so we will need plenty of volunteers to help out with the event. That event happens on the same day as the Spooky Spectrum later that evening at the HRPO so it will be a great opportunity for us to promote that to the visitors.

Finally, we have a request for some star gazing at a Girl Scout camp in Independence, LA on the evening of October 14th. That's a bit farther away than our other outreaches, but I figured I would put it out there to see if anyone is up for it. I will probably also try to get them in touch with the Pontchartrain Astronomy Society as they have some north shore members, too.

As always, if you are able to help out with any of these events, please let me know as soon as you can. These things are always a fun time and a great way to learn more about the night sky yourself. (You'd be amazed how much you learn trying to find the answers to questions that people will be asking!)

Upcoming Events:

Thursday, October 12th

Lutcher Library 1879 W Main St. Lutcher, LA
7:30pm-9:30pm
Night sky viewing
2-3 volunteers needed

Saturday, October 14th

Girls Scout Campout
Independence, LA
Time: Evening
Star gazing for 200 campers
2 or more volunteers needed

Saturday, October 21st

Baton Rouge Mini Maker Faire
Main Library
10:00am-5:00pm
Information/exhibit/demonstration table and solar observing
6-8 people needed to work shifts throughout the day

Clear Skies,



Ben Toman
Outreach Coordinator

2017 Officers:

President: John Nagle
Vice-President: Craig Brenden
Secretary: Ben Toman
Treasurer: Trey Anding

BRAS Liaison for BREC:

Chris Kersey

BRAS Liaison for LSU:

Greg Guzik

Committees/Coordinators:

Outreach:

Ben Toman

Observing:

John Nagle

Light Pollution:

Thomas Halligan

Webmaster:

Frederick Barnett

Newsletter:

Michele Fry





BRAS Light Pollution Committee Report

Meeting now takes place at 5:45, same day as the 6:30 BRAS Business Meeting (see minutes below)
Everyone is welcome to join in.

9/11/17

- ✚ Thomas calls meeting to order.
- ✚ 1 New member in attendance.
- ✚ 9 members total in attendance.
- ✚ Previous meeting's minutes were read and were approved by committee.

Old Business-

- ✚ Globe at Night observations are still way off pace to meet the measurement goal of 200.
- ✚ Merrill's observations of Sam's Club were reviewed by the committee for the Good Lighting Award. The committee decided that more photos were needed of the light fixtures in day light to determine the style of fixture.
- ✚ Thomas has contacted the city of St. Gabriel twice and has received no response. Thomas will reach out for a third time and will allow a 3 day window for reply.
- ✚ HRPO manager, Christopher Kersey, asked for volunteers for the Natural Sky Conference in November. This is to ensure networking with the invitees.
- ✚ The committee discussed the current draft of the petition for good lighting. It was voted to change key phrases, and send the revised petition out.



Perseid Meteor Shower

New Business-

- ✚ Thomas will send LPC specific documents via email to committee members only.
- ✚ The committee also voted on the moving of the LPC meetings to the same day as the B.R.A.S Business meeting. (The Wednesday prior to the regular B.R.A.S meeting) The motion passed 5-2
- ✚ The color scale for the Good Lighting Award was briefly discussed before moving to shelf the topic until the next meeting due to time constraints.

Motion to close meeting was made and passed.

Meeting Adjourned.

Submitted by Krista Dison, Secretary

Chairman, Thomas J. Halligan





Recent Entries in the BRAS Forum

Below are selected additions to the BRAS Forum. There are also nine active polls. The Forum has reached 4900 posts.

[Katherine Johnson Computational Research Facility Dedicated](#)
[Landolt Astronomical Observatory Open to Public on Sunday 1 October](#)
[Request for Suggestions for Nearby Natural Skies for Astrophotography](#)
[Capital Region Planning Commission Wraps Up MOVE2042 Public Input](#)
[Peggy Whitson, Jack Fischer and Fyodor Yurchikhin Return to Earth](#)
[Visual Portion of 2018 Martian Opposition Begins](#)
[Mercury Conjuncts with Regulus](#)
[Neptune Reaches Opposition](#)
[No Confirmation for Two Extremely Bright Iridium Flares](#)
[HRPO Open for Cassini's Demise](#)
[GOES-16 Data on Hurricanes Harvey and Irma Invaluable](#)
[Ben Toman Captures Amazing Sunspot Chains](#)
[Two Radio Blackouts, Two Solar Radiation Storms, and Six Geomagnetic Storms](#)
[Asteroid Florence has Last Close Visit for Over 450 Years](#)
[OSIRIS-REx Uses Earth for Gravity Assist](#)
[AAVSO Director Visits LSU](#)
[NASA Marks Fortieth Anniversary of Voyager](#)



20/20 Vision Campaign

GLOBE at Night: 11 to 20 October [Cygnus]

OBSERVATIONS NEEDED FOR SCHOOL PROJECT

BRAS is in the process of assisting yet another student at St. Joseph's Academy acquire raw data. This young lady (named Shreya) will need data concerning how light pollution effects the view of certain variable stars while they are at their minima.

Below is our suggested list of variable stars for Shreya. Dates are the times during which the star is at least thirty degrees above the horizon at 9pm Standard Time and 10pm Daylight Time. All periods (time from maximum to maximum) are fewer than ninety days. All chosen stars have a difference of at least 1.0 between maximum and minimum magnitude.

Shreya probably has to turn in data to her instructor very soon! If you have not done so, please take a measurement and send it in as soon as possible.

RX Leporis

Magnitude Range: 5.4 to 7.4 Period: 75 days Class: K
Dates: 11 December to 9 March

T Monocerotis

Magnitude Range: 5.6 to 6.6 Period: 27 days Class: G
Dates: 14 December to 12 April

S Leporis

Magnitude Range: 6.0 to 7.6 Period: 89 days Class: K
Dates: 12 January to 4 March

ST Ursae Majoris

Magnitude Range: 6.0 to 7.6 Period: 81 days Class: M
Dates: 12 February to 15 July

g Herculis

Magnitude Range: 4.4 to 6.0 Period: 80 days Class: M
Dates: 29 April to 28 September

R Lyrae

Magnitude Range: 3.9 to 5.0 Period: 46 days Class: M
Dates: 5 June to 6 November

Sheliak

Magnitude Range: 3.3 to 4.4 Period: 12.9 days Class: B
Dates: 8 June to 31 October

X Cygni

Magnitude Range: 5.9 to 6.9 Period: 16.4 days Class: F
Dates: 5 July to 29 November

Algol

Magnitude Range: 2.1 to 3.4 Period: 2.87 days Class: B
Dates: 9 October to 9 March

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.



Citizen Scientists

Watch LSU's own Tabath Boyajian's **TED TALK** on how amateur astronomers helped discover Tabby's Star.

The Most Mysterious Star In The Universe

https://www.ted.com/talks/tabetha_boyajian_the_most_mysterious_star_in_the_universe#t-108999

Listen to this **TED Radio Hour** podcast, which includes Tabatha along with other Citizen Scientists doing amazing group research that the academic world does not have the resources to do on its own. With the help of social media, Wikipedia, Facebook, and the internet, we can all be scientists now!

Citizen Science

<http://www.npr.org/programs/ted-radio-hour/551030943/citizen-science>

Want to Become a Citizen Scientist?

NASA lists various astronomical projects they invite citizen scientists to help with.

<https://science.nasa.gov/citizenscientists>



Messages from HRPO

Highland Road Park Observatory



FRIDAY NIGHT LECTURE SERIES

all start at 7:30pm

6 October: “Wonders of the Fall Sky” BREC Education Curator Amy Brouillette will take the audience on a fascinating tour of [Baton Rouge’s autumn season](#). She’ll highlight the celestial gems that will sparkle throughout the next three months—gems visitors will be able to see live if they continue to visit HRPO!

13 October: “Space Law” From commercial hotels and flights to [mining for raw materials](#), human beings will begin to use space in a practical manner very soon. Zach Miller of the Hebert Law Center will show HRPO patrons interplanetary space from a brand-new perspective—a legal perspective.

20 October: “The GOES-16 Satellite” The latest in the now legendary [group of weather satellites](#) has been invaluable in gathering data on heavy-hitting storms Harvey, Irma and Maria. In his first talk for HRPO, Channel 33 Chief Meteorologist Jesse Gunkel will introduce this amazing hardware.

27 October: “The Spooky Sampler” Yet another brand-new offering to FNLS patrons! The Friday before Halloween will now be used to highlight a smorgasboard of unsettling stories, images and theories—for our adult audience.

SCIENCE ACADEMY

Saturdays from 10am to 12pm

For ages eight to twelve. \$5/\$6 per child.

7 October: “Fall Day”

14 October: “Cassini”

28 October: “Clouds”



ONE-TIME CALLS FOR VOLUNTEERS

***Saturday 11 October, 12pm to 2pm. One or two volunteers.**

Solar Viewing. Telescope operation, physical science demonstrations, front desk duty. Low to moderate difficulty.

***Friday 10 November, 4:45pm to 6:45pm. One or two volunteers.**

The Edge of Night. Assistance with pointing out planets, brightest stars and visible passes during twilight. Low difficulty.

***Friday 17 November, 5:30pm to 8:30pm. Two to four volunteers.**

Natural Sky Conference. Networking with exhibiting “powers-that-be”, explaining the importance of eradicating the area’s light pollution. Low difficulty.

***Saturday 18 November, 6pm to 9pm.** *Two to four volunteers.*
HRPO 20th Anniversary Retrospective. Networking with long-time public supporters of HRPO. Standing up and reciting anecdotes regarding HRPO. Low 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”. We are asking any members with the time to do so to assist. Thank you.



11th Annual Spooky Spectrum **Saturday 21 October from 6pm to 10pm** **No admission fee. For all ages.**

Come visit on this moonless night—if you dare—as HRPO delves into the eerie side of astronomy, physics and aeronautics *for the eleventh consecutive year*. We'll have creepy science demonstrations, some of which we've never used. And don't forget the stories. Strange sky phenomena...extra dimensions... extraterrestrials. Be warned—we want to make you think!



Observe the Moon Night **Saturday 28 October from 7pm to 10pm** **No admission fee. For all ages.**



Our nearest celestial neighbor and [constant companion](#) has been visited by twelve human beings on six different occasions. There's nothing, however, to stop us from doing the next best thing! During this night of [lunar excitement](#) telescopes [around the world](#) will be pointed at our [sole natural satellite](#). HRPO will showcase the best historical lunar imagery, fascinating displays describing [fact-finding missions](#), Apollo landings, myths and [little-known facts](#) about the Moon. There will be a visual, unaided-eye tour of the Moon. Telescope viewing will occur as usual, with the Moon being the prime focus. Sound like a party? "I love Halloween candy," Tom snickered.



Natural Sky Conference

Friday 17 November from 5:30pm to 8:30pm

No admission fee. For ages fourteen and older.

Although open to the general public the Conference will be aimed at those individuals and organizations in town that have a direct ability to quell the light pollution in the area. HRPO anticipates having the Conference at least through the end of twilight, so participants can see damage currently being caused by the light pollution in the area. The theme of the Conference will be invitees answering questions (seen beforehand) asking them what they will be actively doing within the next twelve months to lessen the light pollution in the area.



HRPO 20TH Anniversary

Saturday 18 November from 6pm to 9pm

No admission fee. For all ages.

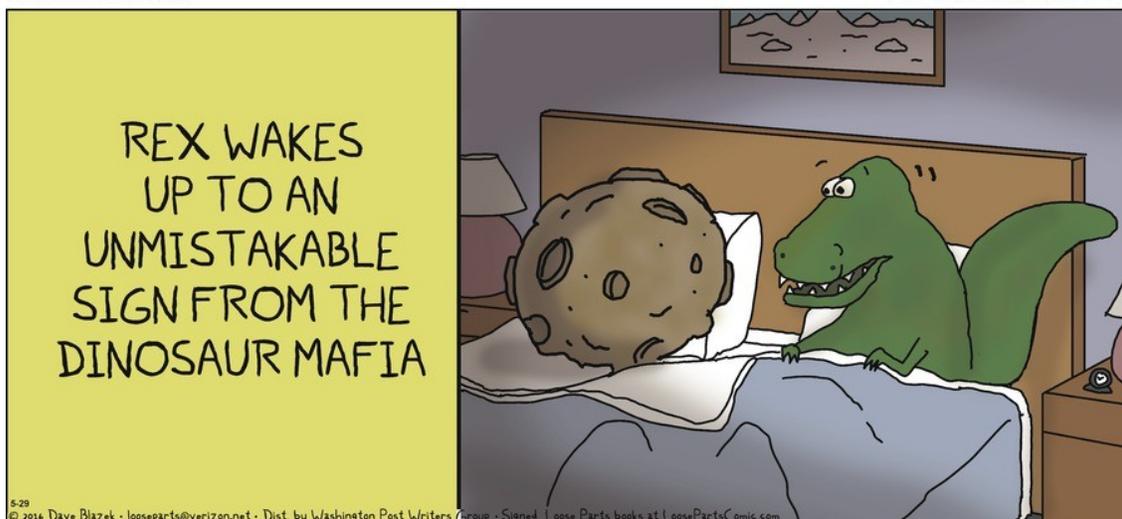


For twenty years 13800 Highland Road has been the site of asteroid discoveries, comet apparitions, elongations, conjunctions, oppositions, transits, eclipses and fireballs. Come celebration with us and we fondly remember the past and look to the future with renewed resolve to continue to bring to space enthusiasts, taxpayers, students and the curious an unhindered views of the beauty of the heavens.

TRICK OR TREAT NIGHTMARE!!!

LOOSE PARTS

BY DAVE BLAZEK





Observing Notes:

by John Nagle

Phoenix

Position: RA 1, Dec. -50°

Named Stars:

Ankaa (Alpha Phe), “al-‘angā”, “the phoenix”, or **Nair al-Zaarak**, “an-nairaz-zawrag”, “the bright star of the skiff”, mag. 2.40, 00 26 16.87 -42 18 18.4, is a spectroscopic binary star, with the primary being an orange giant star. The pair has an orbital period of 3848.8 days (or 10.5 years).

There are no other named stars in Phoenix.

Deep Sky:

There are no deep sky objects above magnitude 10, but there are a few notable items:

Robert’s Quartet, combined has a visual magnitude of 13, is a group of 4 galaxies: **NGC 87** (mag. 14.1); **NGC 88** (mag. 15.0); **NGC 89** (mag. 14.2); and **NGC 92** (mag. 13.8). These galaxies are in the process of colliding and merging. All are within a circle with a radius of 1.6 arc minutes, corresponding to about 75,000 light years.

Phoenix Dwarf Galaxy, **PGC 006830**, is a dwarf galaxy in the Local Group; along with the **Milky Way**, the **Triangulum Galaxy (M33)**, and the **Andromeda Galaxy (M32)**, the **Magellanic Clouds**, and other galaxies.

Phoenix Cluster is one of the largest known galaxy clusters, believed to contain around 3 trillion stars inside its 7.3 million light years-wide expanse. It forms around 740 stars annually, representing the highest rate ever documented inside a galaxy cluster. It emits more X-rays than any other galaxy cluster observed. There is a super-massive black hole located in the center of the system that has 6 billion times the mass of our sun, and is expanding at a rate of about 60 solar masses a year.

HLX-1, or **Hyper-Luminous X-ray source 1** is an intermediate-mass black hole (the first one of its kind identified) in galaxy **ESO 243-49** (mag. 14.9), 01 11 15 -45 58 37. The black hole is believed to be a galactic remnant of a dwarf galaxy that was absorbed by **ESO 243-49** after a galactic collision.

There are 34 NGC, 9 IC, 4 MCG, 4 AGC, and 30 ESO items below mag. 10.

Other Stars:

Delta² Phe, mag. 5.7, 01 31 14.98 -49 04 23.1, is a yellow sub-giant star with one planet in orbit.

Zeta Phe, mag. 3.94, 01 08 23.06 -55 14 45.0, is an eclipsing binary star with magnitude fluctuating between 3.9 and 4.4 in a period of around 1.7 days (40 hours). The two stars are 0.05 AU from each other, while a third star (mag. 7.2) is around 600 AU away with an orbital period of 5000 years. In 1976 it was calculated that a nearby 8th magnitude star is a fourth component of the system.

Nu Phe, mag. 4.97, 01 15 10.57 -45 31 55.5, is a yellow-white main sequence dwarf star and it is most likely surrounded by a disk of dust.

HD 142, mag. 5.70, 00 06 19.0 -49 04 30, is a yellow sub-giant star with three planets in orbit.

HD 5388, mag. 6.8, 00 55 11.89 -47 24 21.5, has one planet in orbit.

HD 3464, mag. 7.72, 01 04 40.15 -39 29 17.6, has one planet in orbit.

HD 8535, mag. 7.72, 01 23 37.24 -41 16 11.3, has one planet in orbit.

HD 2039, mag. 9.01, 00 24 20.28 -56 39 00.2, has one planet in orbit.

WASP 18, mag. 9.30, 01 37 25.03 -45 40 40.389. has a transiting planet in orbit.

WISE J003231.09-494651.4, is a brown dwarf star.

WISE J001505.87-461517.6, is a brown dwarf star.

HE 0107-5240, mag. 15.7, 01 09 29.10 -52 24 34.0, is one of the most metal-poor stars known in the **Milky Way**. The star's low metallicity indicates that it is one of the oldest **Population II** stars to have formed. **Population II** stars are metal-poor stars that formed during an earlier time of the **Universe**, and are believed to have created all the elements in the **Periodic Table** other than the more unstable ones. If the star was completely metal free, it would belong to **Population III**, the hypothetical, extinct first generation of stars.

There are **5 John Herschel stars**, **4 WASP stars**, **1 BPM star**, and **1 Gliese star** beyond mag. 10.

Sky Happenings:

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



- Oct. 3rd - The **Moon** passes 0.7° south of **Neptune** at 7:00 AM CDT.
- Oct. 5th - Dawn: **Venus** and **Mars** form a tight pair low in the east early in the morning twilight, **Venus** passes 0.2° north of **Mars** at 8:00 AM CDT, **Full Moon** occurs at 11:40 PM CDT.
- Oct. 6th - The **Moon** passes 4° south of **Venus** at 5 AM CDT.
- Oct. 7th - **Mars** is at aphelion (154.9 million miles from the **Sun**) at 5 PM CDT.
- Oct. 8^{th/9th} - Late evening, morning: The waning gibbous **Moon** shines with the **Hyades** and **Aldebaran**.
- Oct. 8th - **Mercury** is in superior conjunction with the **Sun** at 4 PM CDT.
- Oct. 9th - The **Moon** is at perigee (227,953 miles from **Earth**) at 12:55 AM CDT, The **Moon** passes 0.6° north of **Aldebaran** at 2 PM CDT.
- Oct. 12th - **Last Quarter Moon** occurs at 7:25 AM CDT, Evening: **Neptune** is ½° below **Lambda Aquarii** in the evening sky for the next week.
- Oct. 15th - The waning crescent **Moon** occults **Regulus** from about 4:30 AM CDT to 5:30 AM CDT.
- Oct. 17th - The **Moon** is 1° from **Mars** and 6° above **Venus** at dawn, The **Moon** passes 1.8° north of **Mars** at 5 AM CDT, The **Moon** passes 2° north of **Venus** at 7 PM CDT.
- Oct. 19th - **Uranus** is at opposition at 1 PM CDT, **New Moon** occurs at 2:12 PM CDT.
- Oct. 20/22 - Morning: The modest **Orionid** meteor shower is active before dawn's first light.
- Oct. 21st - The annual **Orionid** meteor shower peaks before dawn.
- Oct. 23rd - Dusk: **Saturn** shines fairly low in the southwest, about 6° to the left of the waxing **Moon**.
- Oct. 24th - The **Moon** passes 3° north of **Saturn** at 7 AM CDT, The **Moon** is at apogee (251,751 miles from **Earth**) at 9:26 PM CDT.
- Oct. 26th - **Jupiter** is in conjunction with the **Sun** at 1 PM CDT.
- Oct. 27th - **First Quarter Moon** occurs at 5:22 PM CDT.
- Oct. 28th - Asteroid **Pallas** is at opposition at 7 PM CDT.
- Oct. 29th - Asteroid **Iris** is at opposition at 7 PM CDT.
- Oct. 30th - The **Moon** passes 0.9° south of **Neptune** at 4 PM CDT.



Planets:

Mercury – **Mercury** goes through superior conjunction with the **Sun** on October 8th, passing from the morning to the evening sky. Viewers in the southern **United States** and points south might glimpse

Mercury in the evening twilight at the end of the month. The planet will then shine at magnitude -0.4, and hang a couple of degrees high in the west-southwest 30 minutes after sunset.

Venus/Mars – On October 1st, **Venus** and **Mars** appear 2.5° apart against the background stars of **Leo**.

Venus, magnitude -3.9, rises 13 minutes before **Mars**, magnitude 1.8. **Venus** appears 11" wide, and **Mars** 3.7" wide. On October 5th, the two planets are just 0.2° apart, but are only about 10° high an hour before sunrise, with the 4th magnitude **Sigma Leonis** 0.3° north of **Venus**. The two planets move eastward relative to the background stars during October, with **Venus** crossing the border into **Virgo** on the 9th. **Venus** passes 0.8° northeast of 4th magnitude **Beta Virginis** on October 12th, 0.2° north of the 4th magnitude **Eta Vir** on the 18th, 1.3° southwest of 3rd magnitude **Gamma Vir** on the 22nd, and 0.3° south of 4th magnitude **Theta Vir** on the 29th. By the 31st, **Venus** stands 16° east of **Mars**. **Mars** has a somewhat slower pace, crossing into **Virgo** on October 12th, and sliding 0.5° north of **Beta Vir** on the 18th. On the 30th, Mars lies 0.3° southwest of **Eta Vir**, and nearly on top of 6th magnitude **13 Vir**. As twilight begins on the **East Coast**, they lie just 44" apart, and from the **West Coast** 4.2' separate the two. On October 17th, the 5% lit crescent **Moon** stands 2° to **Mars**' left and 6° to the lower left of **Venus**.

Jupiter – Early October provides observers with their final chance to see **Jupiter** in the evening sky this year. Those with a clear, unobstructed western horizon can find the planet 3° high a half-hour after sunset, shining at magnitude -1.7. **Jupiter** disappears in the **Sun**'s glare after the first week in October, passing behind the **Sun** on the 26th, and reappearing before dawn in early November.

Saturn – **Saturn** lies 20° above the southwest horizon at the end of twilight in early October, dropping lower each week. **Saturn** sets more than 3½ hours after the **Sun** on October 1st, but only 2½ hours on October 31st. The planet shines at magnitude +0.5 against the backdrop of southern **Ophiuchus**, creeping eastward toward **Sagittarius**. On October 3rd, **Saturn** will be 3° north-northeast of 3rd magnitude **Theta Ophiuchi**, and ends the month 4° northeast of the star. The planet's disk appears 16" across, and the rings span 36" in mid October, with the ring system tilted 27° to our line of sight – the maximum angle possible. The rings won't appear this open again until 2032. **Titan**, **Saturn**'s 8th magnitude moon, completes an orbit every 16 days. Look for it due south of the planet on the 5th and 21st, and due north on the 13th and 29th, appearing 1.2' from the planet. Outermost moon **Iapetus** glows at 10th magnitude when it reaches greatest western elongation on October 13th, when it then lies 8' from the planet.

Uranus – **Uranus** reaches opposition on October 19th, and so remains visible all night. The planet maintains its magnitude 5.7 peak throughout October. **Uranus** lies among the background stars of **Pisces**, starting the month 1.3° northwest of magnitude 4.3 **Omicron Piscium**, and ends the month 2.2° due west of the star. A telescope will reveal the planet's 3.7" diameter disk and impressive blue-green color. From mid-northern latitudes on the night of the opposition, the planet lies 60° above the southern horizon at its peak around 1 AM local daylight time. This is the highest it has appeared in opposition since February 1965.

Neptune – **Neptune** appears in the southeast as darkness falls in early October, and climbs highest in the south around 11 PM local daylight time. The planet glows at magnitude 7.8, residing in **Aquarius** less than 1° from magnitude 3.8 **Lambda Aquarii**. **Neptune** appears 0.6° east-southeast of **Lambda Aquarii** on October 1st, and the same distance due south of the star on the 31st. In a telescope, the planet shows a distinctive blue-grey color with a disk of 2.3". On the night of October 5th/6th, the moon **Triton** passes in front of a star – viewers in the northeast **United States** and eastern **Canada** can view this rare occultation in the evening. A 6-inch telescope will show the event. The magnitude 12.4 star, cataloged as **4U 410-143659**, dims by 1.4 magnitudes as the magnitude 13.5 moon occults it. Viewers will see the star disappear for up to 161 seconds sometime between 6:44 PM and 7:00 Pm CDT.

Moon – The fairly fat waning gibbous **Moon** rises late on the evening of October 8th, and creeps closer to **Aldebaran** for the rest of the night, and into the dawn on the 9th. The **Moon** hangs about 5° to the lower right of **Aldebaran** before sunrise on the 9th. The waning crescent **Moon** occults **Regulus** just before dawn or during dawn on October 15th for most of the **United States** and part of **Canada**. A thinning lunar sliver hangs to the left or lower left of dim **Mars** on October 17th, with the pair being about 8° above **Venus** in the evening sky. The waxing crescent **Moon** beams about 6° to the right of **Saturn**, fairly low in the southwest, on the 23rd. The next evening the **Moon** is about the same distance to **Saturn**'s upper left.

Asteroids – Asteroid 7 Iris is the 2nd brightest asteroid of 2017 (Only **Vesta** was brighter). **Iris** glows at magnitude 6.9 when it reaches opposition and peak visibility late this month. **Iris** will lie within one binocular field of **Aries the Ram**'s brightest star – magnitude 2.0 **Hamal (Alpha Arietis)** all month. This area stands high in the east by mid-evening. In October's final week, the asteroid will shine brightest, and will slide 1.7° due south of **Hamal** and 1.0° due south of magnitude 5.0 **Kappa Arietis**.

Comets – For the last two months comet **PANSTARRS (C/2015 ER61)** has been floating near the **Pleiades** star cluster (**M45**), or the **Seven Sisters**, in northwest **Taurus**. They will remain neighbors during October, though **PANSTARRS**' slow westward motion carries it into eastern **Aries** by the month's final week. The comet should glow at around 11th magnitude as it heads back toward the **Oort Cloud**, from which it came. You will want to avoid viewing during the first 10 days of October when a bright **Moon** shares the evening sky. The two week window of dark skies that follows should be ideal, when **PANSTARRS** then appears some 30° above the eastern horizon at 11 PM local daylight time. As comet **PANSTARRS** moves steadily away from the **Sun**, its dust production is dropping with each passing night. Through most telescopes, it will most likely look like an unimpressive elliptical galaxy – mostly round and a bit brighter toward the center. At 120x or more, the comet's structure should show quite nicely.

Meteor Showers – For several days around October 21st every year, **Earth** passes through the **Orionid** meteoroid stream; sparse, widely scattered bits of **Halley's Comet**. When we cross the same stream again at a different part of our orbit in May, they are called the **Eta Aquarids**. The sky this year will be moonless for the **Orionids** best mornings; October 20th, 21st, and 22nd. Under an excellent dark sky, you might count 10 to 15 swift **Orionids** per hour on these mornings. **Halley's Comet** won't be back until 2061, but on these cold mornings you can greet a few of its tiny lost children.

When to View the Planets:

Evening Sky

Mercury (southwest)
Jupiter (west)
Saturn (southwest)
Uranus (east)
Neptune (southeast)

Midnight

Uranus (southeast)
Neptune (southwest)

Morning Sky

Venus (east)
Mars (east)
Uranus (north)



DARK SKY VIEWING - PRIMARY ON OCTOBER 21ST, SECONDARY ON OCTOBER 28TH

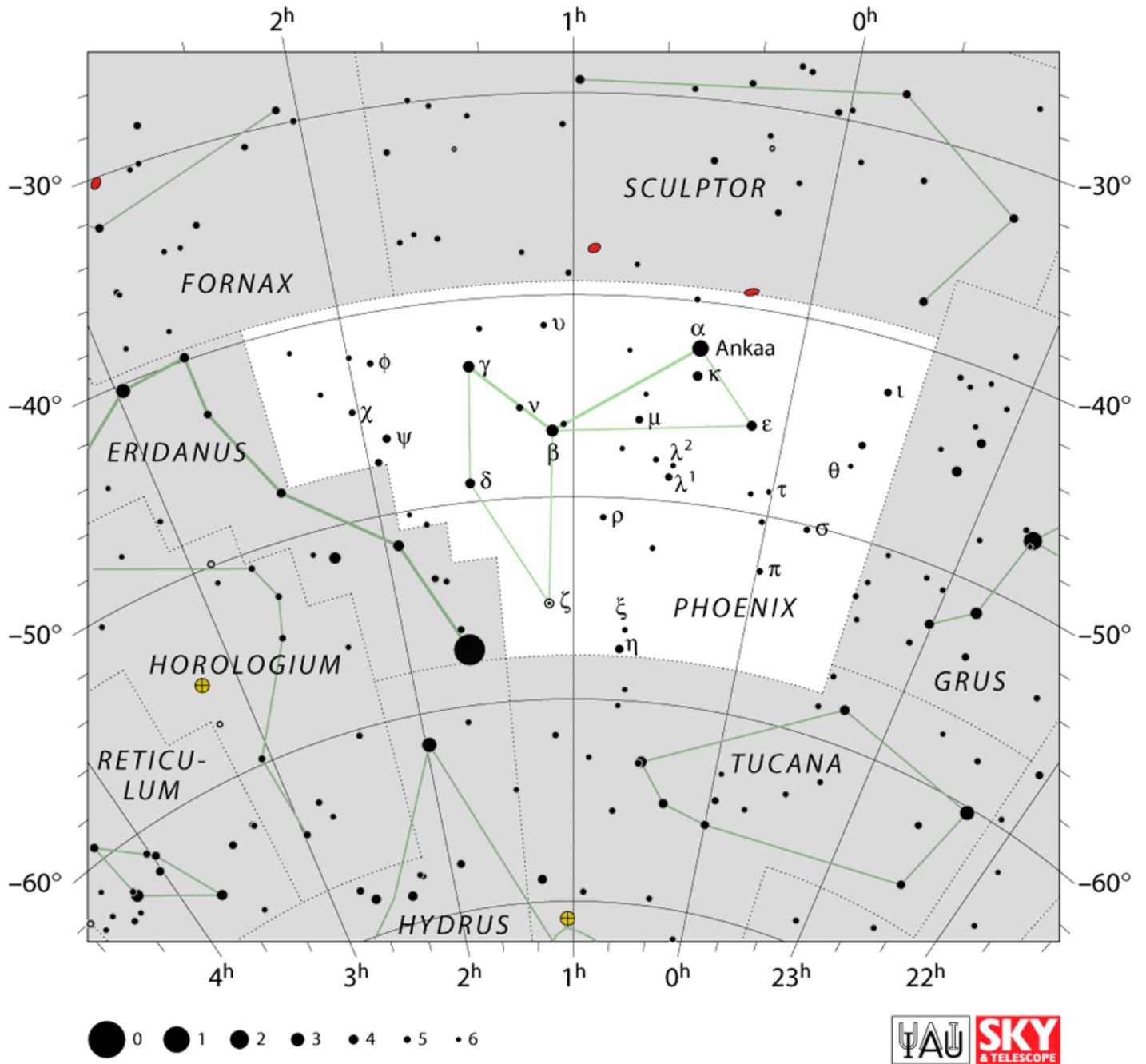
Mythology:

Phoenix – the Phoenix

The phoenix is a constellation representing the mythical bird that supposedly was reborn from its own ashes. The constellation was invented at the end of the 16th century by Dutch navigators Pieter Dirkszoon Keyser and Frederick de Houtman.



Ovid, in his *Metamorphoses*, tells us that “the Phoenix lived for 500 years, eating the gum of incense and the sap of balsam. At the end of its allotted span, the bird built itself a nest from cinnamon bark and incense among the topmost branches of a palm tree, ending its life on the fragrantly scented nest. A baby phoenix was born from its father’s body. The nest was both the tomb of one phoenix, and the cradle of the next. When it was old enough to carry the weight, the young phoenix lifted the nest from the tree and carried it to the temple of Hyperion, the Titan who was the father of the Sun god.”



The End

