Monthly Meeting October 14th at 7PM at HRPO

(Monthly meetings are on 2nd Mondays, Highland Road Park Observatory).

Program: Dr. Manos Chatzopoulos gives his presentation: "When Stars Go Boom"

What's In This Issue?

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Asteroid and Comet News

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Globe at Night

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Science Academy
Solar Viewing
Stem Expansion
13th Annual Spooky Spectrum
Mercurian Elongation
Natural Sky Conference

Observing Notes: Pegasus – The Flying Horse & Mythology

Like this newsletter? See PAST ISSUES online back to 2009
Visit us on Facebook – Baton Rouge Astronomical Society

President's Message

As we move toward the end of the year we need to look for new officers for next, If you wish to be an officer or know of a fellow member who would make a good officer contact someone on this year's Nominating Committee: John Nagle, Merrill Hess, or Craig Brenden.

LIGO Picnic Our Annual picnic was on Saturday, September 22, 2019, at LIGO Livingston. It was great fun, we were able to view a spotless Sun, and we awarded BRAS cofounder **Craig Brenden** a lifetime membership *(see Member's Corner, Page 8).*
Editor's Note: Sorry I have no pics of this event.

ALCon 2022 Bid Preparation and Planning Committee: Will meet on October 12 at 3:00 pm at The Salad Station,7474 Corporate Blvd Suite 206, Baton Rouge, LA 70809. If you are interested in helping out, please join us.

UPCOMING BRAS MEETINGS:
Light Pollution Committee - HRPO, Wednesday October 9, 6:15 P.M.
Business Meeting – HRPO, Wednesday October 9, 7 P.M.
Monthly Meeting – HRPO, Monday, October 14, 7 P.M.

BRAG: No meetings currently scheduled.

BRAS ZAZZLE SHOP We opened a shop on Zazzle, with lots of neat items with the BRAS logo. Please consider shopping there for Christmas. The shop can be found at:
https://www.zazzle.com/store/br_astronomical

VOLUNTEER AT HRPO: If any of the members wish to volunteer at HRPO, please speak to Chris Kersey, BRAS Liaison for BREC, to fill out the paperwork..
MONTHLY SPEAKERS: One of the club's needs is speakers for our monthly meetings if you are willing to give a talk or know of a great speaker let us know.
VOLUNTEERS: While BRAS members are not required to volunteer, if we do grow our volunteer core in 2019 we can do more fun activities without wearing out our great volunteers. Volunteering is an excellent opportunity to share what you know while increasing your skills.
SALE: BRAS is having a surplus telescope/equipment.
Articles: I want to invite members to write articles for our newsletter. And, use the Members Corner to share your interesting astronomy related trips, events, awards, and experiences by sending a write-up to Michele at newsletter@brastro.org
Member Pins: If you have not reserved yours yet, please come to a meeting to pick one up.
Outreach: Please check below for Ben's Outreach Requests. Also, be on the lookout for periodic email notices. Remember, Outreach to our community is a lot of what we do.

Clear Skies

Steven M. Tilley, President

Secretary's Summary of September Meeting

- President, Steven Tilley, calls the meeting to order at 7:04PM.
- 28 members in attendance.
- Steven thanks everyone for coming to the meeting.
- Steven reminds everyone about the LIGO picnic on September 21st.
- Steven gives the floor to Vice President, Thomas Halligan.
- Thomas gives some short announcements about upcoming events at HRPO.
- Thomas introduces Jim Gutierrez as the guest speaker.
- Jim gives his talk on brain waves and gravity waves.
- Jim answers questions following his talk.
- Steven reminds everyone to get their member pin.
- Chris Kersey, HRPO manager, announces the 2019 shirts are delayed.
- Steven gives an update for the plan to bid on ALCon 2022.
- Steven asks new members to introduce themselves.
- John Nagle, Observing Chair, presents Scott Cadwallader with the Astronomical League Solar System Observing Award.
- Raffle held.
- Meeting adjourns at 8:49PM.

Submitted by Krista Reed, BRAS Secretary

John Nagle, Observing Chair, (left) presents Scott Cadwallader (right) with the AL Solar System Observing Award

GET ZAZZLED

2019 Officers:

President: Steven M. Tilley
Vice-President: Thomas Halligan
Secretary: Krista Reed
Treasurer: Trey Anding

BRAS Liaison for BREC:
Chris Kersey
BRAS Liaison for LSU:
Greg Guzik

Committees/Coordinators:
Light Pollution:
John Nagle
Newsletter:
Michele Fry
Observing Notes:
John Nagle
Outreach:
Ben Toman
Webmaster:
Frederick Barnett

BRAS Outreach Report

Hi Everyone,

We had some great Outreach Events in September!!!!!!!!

The month started off with our **first Sidewalk Astronomy, back at Perkins Rowe,** and the night was perfect. Not a cloud in the sky and we got to WOW people with the Moon, Jupiter and Saturn. Lots of turnout and lots of helpers: Ben T., Craig B., Chris K.. Coy W.. Scott C., John N., Krista R., Scott L., and Steven T. Definitely setting the bar high for the rest of this season!

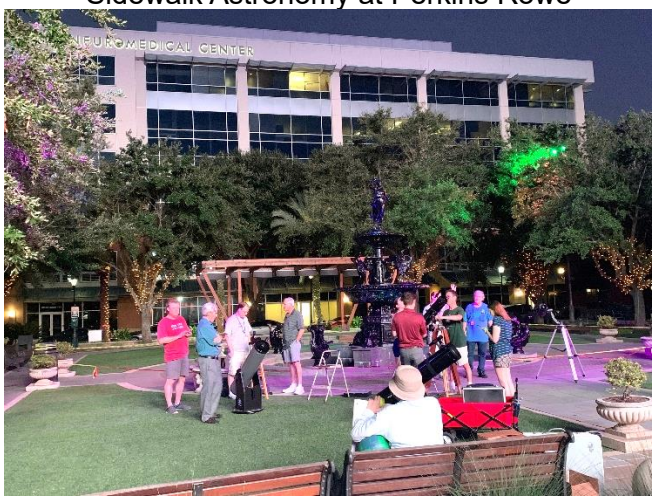
A big thanks to Chris K. and Scott C. for taking the reins on two more events. They had a table set up to represent us at the **Dunham School** (160-170 people reached) and most recently at the **Math, Science and Arts Academy in St. Gabriel** (30 5th graders.) From their reports, we were well received at both.

Please note that the Outreach for the Baton Rouge Free Thinkers has been rescheduled at their request to Wednesday, November 13th.

Also, we were approved to come out to Lamar Dixon for stargazing with the Scouts on Friday, October 18th, (originally requested for the 19th, a day we're already busy with MiniMakers.) They are expecting 200 Scouts with their parents so possibly up to 400 people. The Moon will not be out, but Saturn and Jupiter will be well placed and M13 and several other clusters and objects will be up. If we can get some good weather, this could be a fun time!

We have a BIG day coming up on October 19th (see below) and we are going to need help. Please take a look and let me know ASAP if you can help. The **Maker Fair**e event is a great way to get started with Outreach. We have plenty of things to do and many of them require very little training, but you'll get your feet wet and start to see what it is we do when we go out to these public events.

Sidewalk Astronomy at Perkins Rowe



Chris K's talk at the Math and Science Arts Academy

Scott C.'s Table Setup at the Dunham School

I would also like to point out that we were featured on the **Facebook page of the NASA Night Sky Network** on September 25th. They shared our report and pics from the National Guard kids camp out we did this past Summer. https://www.facebook.com/nightskynetwork

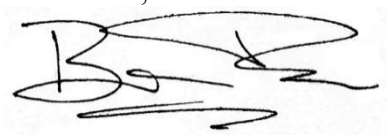
Upcoming Outreach Events:

Tuesday, October 8th
6:30pm-8:30pm
Sidewalk Astronomy at Perkins Rowe

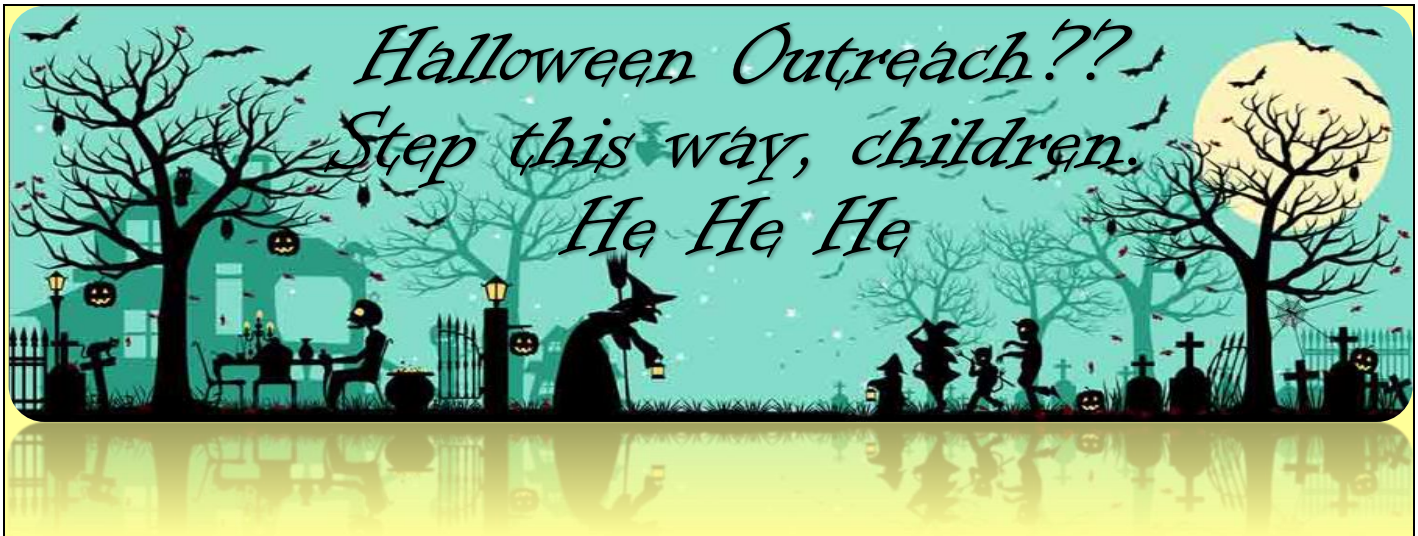
Saturday, October 18th
7pm-9pm
Lamar Dixon Center Boy Scout Campout
3 or more people with scopes for night time viewing needed

Saturday, October 19th
9am-5pm
Mini Maker Faire
Main Library
(several people needed for demos, info and scopes in shifts)

Clear skies,



Outreach Chairperson



BRAS FORUM NOTICE:

The BRAS Forum has a Members Only section, where we post notices or have discussions pertaining to members or the club that the general public can't see. If you would like to join the Members Only section, all you need to do is sign up for the forum (if you haven't already), and then send an email to **fred at eatel dot net** with your forum username and email address, and ask to be added to the members only section. In your User Control Panel, you can set your preferences to receive email notification anytime a post is made.

Thanks, Frederick Barnett, Webmaster

BRAS Light Pollution Committee Report

This committee meets at 6:15, same day as the 7:00 BRAS Business Meeting
(normally on Wednesday before the Monthly Meeting)
Everyone is welcome to join in..

Meeting called to order by John Nagle
No new members, with 6 members in attendance
August minutes were published in September newsletter

Old Business:

1. Update on diorama. Discussed latest meeting with the BR Scale Modelers group.
2. Natural Sky Conference – Letters to be composed and invitations to send. Procedure for sending and reimbursement.

New Business:

1. Agreed on a schedule for the diorama – have all materials by September 22nd; basic build to be finished by October 22nd; totally finished by November 22nd – the Natural Sky Conference.
2. Still no answer from LSU School of Architecture will use Merrill's contact.
3. Suggestion that there is a group at the Robert E. Lee high school that might help construct the diorama. Will need to check it out.

Minutes of this meeting read and approved
Meeting adjourned.

John R. Nagle

Submitted by John Nagle, Chairman

Right: This heavenly view of the Milky Way galaxy was taken in the South Pacific paradise of Mangaia, the most southerly of the Cook Islands. This image was chosen as one of the winners of the **National Maritime Museum's Astrophotographer of the Year 2011 Contest**.

Read the article, **Milky Way Galaxy: Facts About Our Galactic Home**

https://www.space.com/19915-milky-way-galaxy.html

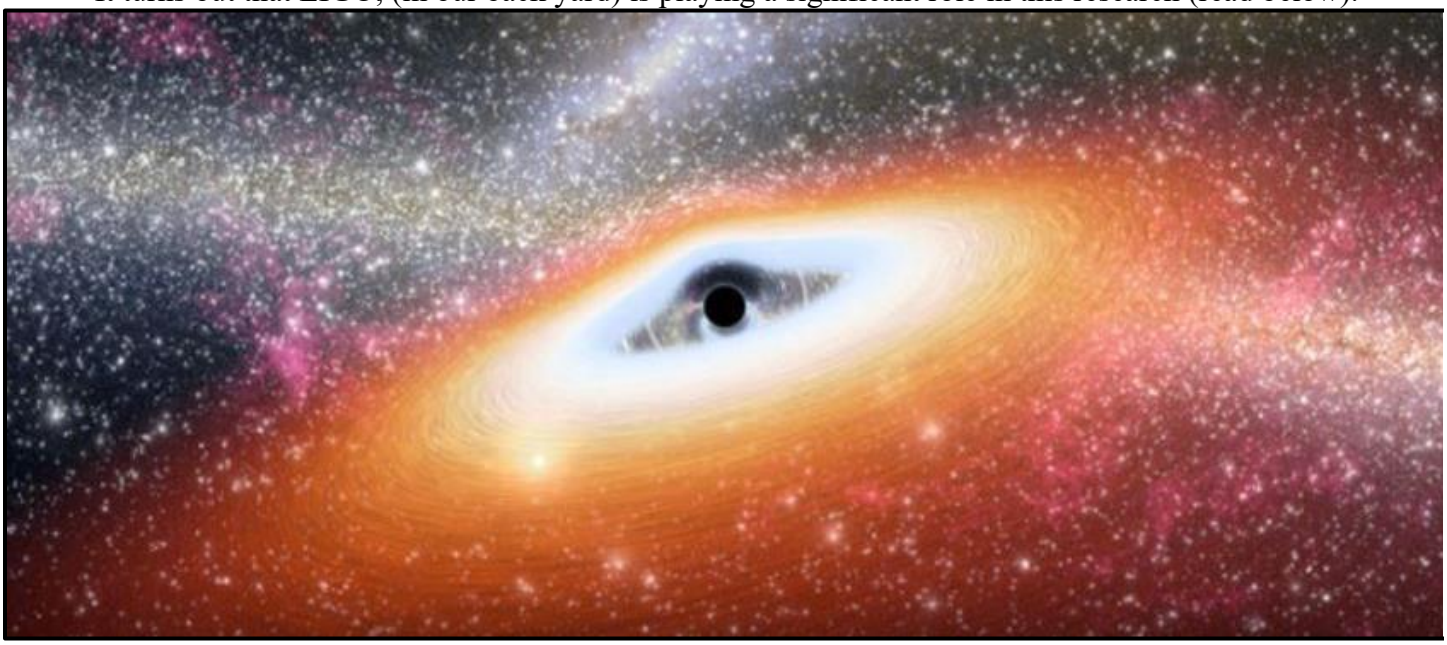
Globe At Night

Target for the Globe at Night program is **Pegasus from October 19th through the 29th.**
If you would like to participate in this citizen scientist program, you can find instructions at **https://www.globeatnight.org/**

News from the Jet Propulsion Laboratory's website, September 14, 2019

Black Hole Seeds Missing in Cosmic Garden

It turns out that LIGO, (in our back yard) is playing a significant role in this research (read below).



The article begins:

"In the vast garden of the universe, the heaviest black holes grew from seeds. Nourished by the gas and dust they consumed, or by merging with other dense objects, these seeds grew in size and heft to form the centers of galaxies, such as our own Milky Way. But unlike in the realm of plants, the seeds of giant black holes must have been black holes, too. And no one has ever found these seeds – yet . . . . . **In 2016, LIGO . . . . based in Livingston, Louisiana,** and Hanford, Washington, picked up the signal of two black holes merging. The masses of these black holes - 29 and 36 times the mass of the Sun, respectively - surprised scientists . . ."

Read the whole article:

https://www.jpl.nasa.gov/news/news.php?feature=7504:

BACK

Members/Community Corner

Here's where we feature articles and photos about BRAS members' astronomy-related accomplishments and adventures outside of BRAS activities (as if there were any spare time for such things!), and/or other astronomical happenings in our neck of the Universe. Send your contributions to Michele at newsletter@brastro.org

This month highlights **Craig Brenden** (cofounder of BRAS in 1981, who was awarded a Lifetime Membership in BRAS at our LIGO picnic last month), and his wife **Carol.** Both were featured in the **July/August edition of City Social Magazine. "Living Close To The Stars".** It's an amazing story. You can read it online. Go to www.citysocial.com, then click READ MAGAZINE ONLINE, select the July/August 2019 cover, then scroll to page 19. Here's a snapshot of the article.

By Rosalind Tuminello

Photo by Craig Brenden

Living Close to the Stars

The Home of Carol and Craig Brenden

Living close to the stars for Craig and Carol Brenden has nothing to do with Hollywood and Beverly Hills. Instead, it is what Carol calls their "20-year makeover" which included the installation of an observatory affectionately known as Craig's Sky Cave! Although the couple built the house—located in the southeastern section of the city—in 1991, it is stunningly pristine and has the contemporary look of new construction thanks to the talents the couple brought into the project: Carol's flair for decorating and Craig's expertise in design. As owners of the observatory, they reserve the right to the title of the most distinctive house in their neighborhood—just look for the dome!

"As a young boy, I spent hours lying in the back seat of the car and looking up at the sky, in awe of the stars," recalled Craig. "I was hooked on the subject," he added.

"Yes," agreed Carol with a chuckle, "on our first date he brought out the telescope."

"I think it was the second date," Craig chimed in. "My second date with Carol was with my 'ole silver tube of a telescope," guess I was trying to impress her. It worked! She was fascinated with the stars and being able to find Scorpio and view the rings of Saturn," Craig continued.

Craig's family moved from the Seattle area to New Orleans in 1963, following a job transfer for his father, who was an aeronautical engineer with Boeing assigned as project engineer on the Saturn V moon rocket. Once this was completed, his parents returned to Bellevue, Washington and Craig remained in Louisiana at LSU. Naturally Craig proposed under the dark sky of Seattle with beautiful stars glowing above. Before the couple married in 1973, Carol was established in her career in nursing and Craig had entered the teaching field.

"While still teaching chemistry and physical science at Central High School I worked weekends at the Old Planetarium on North Blvd. I would take our two daughters, who were as excited to look up as their dad was giving the presentations. The girls would collect the tickets," Craig related fondly.

In 1981 Craig, along with Wally Parsell and Bob Sinitere, formed the Baton Rouge Astronomical Society, best known as BRAS. Craig has been an active member since. He continues to be a resource through BRAS to the community and surrounding areas as it relates to sky viewing, how to purchase a telescope, and how to use one. Craig had been the educational curator of the Highland Road Observatory and is one of its most ardent fans and eagerly encourages members of the community to visit and enjoy what it has to offer to the community.

"It has a terrific program to offer for those who are interested in the stars, astronomy and the mystique of the heavens," he said enthusiastically. "After I retired from teaching I purchased a very nice refractor telescope, but I soon learned how difficult it was to maneuver out of my storage area and thus my dream to build my own dome. Tired of tripping and possibly damaging my prized possession. I needed to explore an option to permanently mount the scope, so my Sky Cave became my vision. I found a company locally that agreed to undertake my project. To my knowledge no other home domes exist in Baton Rouge. This would be a first for this company (Expand Construction). The scope is mounted on a thick solid concrete pillar, necessary to accommodate the weight and prevent vibrations to the scope. The dome itself rolls open to expose the sky," explained Craig.

The Sky Cave housing the telescope and the dome is seamlessly attached to the main house. It is heated and air conditioned with a small efficient office with interesting astronomical charts displayed on the walls. A sturdy wooden staircase leads to the actual telescope area that can accommodate two adults and a small child. Visitors and family will experience the thrill of stargazing, mesmerized by the magnificent sky that looks as if millions of glittering diamonds had been scattered across it in a breathtaking sight.

The Brendens embarked on their 20-year makeover and not only created a splendid place but distinguished their home as one of the most fascinating around, close to the stars.

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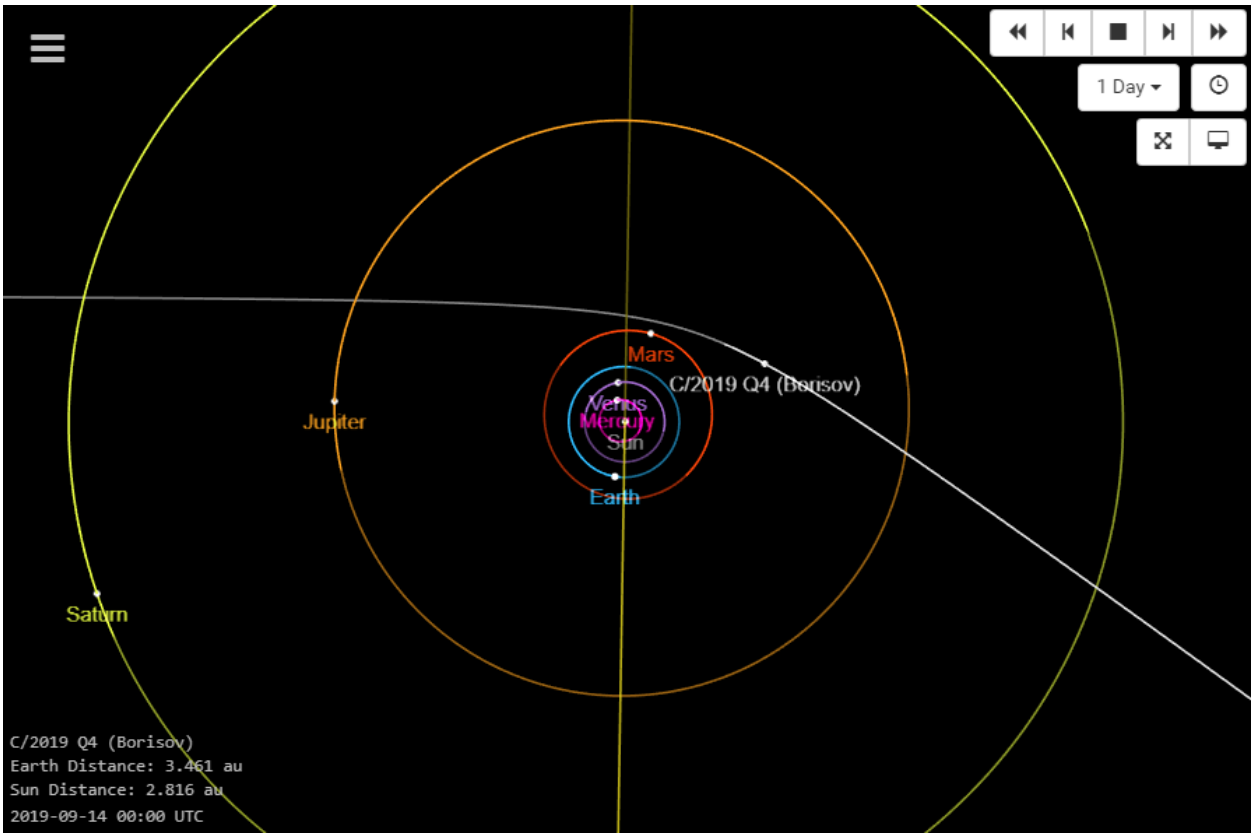
Flying “Rocks” and “Dirty Snowballs”:

Asteroid and Comet News

October 2019

Volume 1. Issue 9.



English: Comet - C/2019 Q4 (Borisov) - Orbit Diagram - as/of September 14, 2019 https://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2019Q4;old=0;orb=1;cov=0;log=0;cad=0#orb JPL Small-Body Database Browser(Wikimedia Commons https://commons.wikimedia.org/wiki/File:Comet-C2019Q4-Orbit-20190914.png)

Gennadiy Vladimirovich Borisov, a Russian amateur astronomer, has discovered the first known interstellar comet, 2I/Borisov. Discovered at MARGO (Gennadiy Borisov's observatory) in the Republic of Crimea on Aug 30, 2019. This object was reported to the Minor Planet Center as a "comet candidate" using the observer-assigned temporary designations gb00234. This object was posted to the NEOCP/PCCP, confirmation page, and observations poured in from around the World. On Sep 11, 2019, MPEC 2019-R106 : COMET C/2019 Q4 (Borisov) was issued, which stated the possibility and the need for more observations. MPEC 2019-S72 : 2I/Borisov = C/2019 Q4 (Borisov) was issued on Sep 24, 2019. This MPEC stated confirmation of its "hyperbolic orbit and interstellar origin" and "assigned the permanent interstellar designation 2I."

See

- MPEC 2019-R106 : COMET C/2019 Q4 (Borisov) : https://minorplanetcenter.net/mpec/K19/K19RA6.html
- MPEC 2019-S72 : 2I/Borisov = C/2019 Q4 (Borisov): https://minorplanetcenter.net/mpec/K19/K19S72.html
- MPC Database: 2I/Borisov = C/2019 Q4 (Borisov) https://minorplanetcenter.net/db_search/show_object?utf8=%E2%9C%93&object_id=2I
- FAQ for gb00234 = C/2019 Q4 = 2I (Borisov) [by Bill Gray at ProjectPluto] https://projectpluto.com/temp/2i.htm
- JPL Small-Body Database Browser: C/2019 Q4 (Borisov): https://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2I
- 2I/Borisov (From Wikipedia, the free encyclopedia) https://en.wikipedia.org/wiki/2I/Borisov

JPL Close Approach Data from Sep 2, 2019 to Sep 33, 2019 Distance Nominal < 1 Lunar Distance

Object	Close-Approach (CA) Date	CA Distance Nominal LD (au)	H (mag)	Estimated Diameter
(2019 RQ)	2019-Sep-02	0.29 (0.00074)	30.6	2.1 m - 4.6 m
(2019 RP1)	2019-Sep-05	0.10 (0.00025)	27.8	7.4 m - 17 m
(2019 RC1)	2019-Sep-07	0.48 (0.00123)	28.8	4.6 m - 10 m
(2019 SJ)	2019-Sep-16	0.64 (0.00163)	27.5	8.4 m - 19 m
(2019 SU2)	2019-Sep-21	0.19 (0.00048)	29.9	2.7 m - 6.1 m
(2019 SD1)	2019-Sep-21	0.73 (0.00187)	28.4	5.5 m - 12 m
(2019 SS2)	2019-Sep-21	0.30 (0.00077)	30.7	2.0 m - 4.4 m
(2019 SS3)	2019-Sep-22	0.73 (0.00188)	26.2	15 m - 34 m

As of 2019-09-30 there is

796,354 discovered asteroids (MPC)(https://www.minorplanetcenter.net/)

20,998 discovered Near-Earth Objects (MPC) (https://www.minorplanetcenter.net/)

4,143 discovered Comets (MPC)(https://www.minorplanetcenter.net/)

940 objects listed on JPL's Sentry: Earth Impact Monitoring(JPL) (https://cneos.jpl.nasa.gov/sentry/)

2,335 objects have been removed from Sentry(JPL) (https://cneos.jpl.nasa.gov/sentry/removed.html)

For more information read Jon Giorgini's "Understanding Risk Pages"

(http://www.hohmanntransfer.com/by/giorgjon.htm) (i.e. "A risk-page listing is not a *prediction* of impact")

The following objects were removed from NASA JPL's Sentry: Earth Impact Monitoring list from 2019-09-01 to 2019-09-30

Object Designation	**Removed (UTC)**
2019 SQ1	2019-09-26 15:39:38
2019 RV3	2019-09-26 15:30:08
2019 SF1	2019-09-25 13:35:39
2019 RQ1	2019-09-18 13:30:30
2019 RX3	2019-09-18 13:29:42
2019 RW	2019-09-17 13:30:31
2019 RO2	2019-09-17 13:29:44
2014 QF33	2019-09-14 22:19:27
2019 RC2	2019-09-13 13:34:20
2019 RT	2019-09-07 13:30:50
2019 QV7	2019-09-07 13:30:19
2019 RJ1	2019-09-07 13:29:52

Useful Links:

Guide to Minor Body Astrometry (https://www.minorplanetcenter.net/iau/info/Astrometry.html)

How Are Minor Planets Named? (https://www.minorplanetcenter.net/iau/info/HowNamed.html)

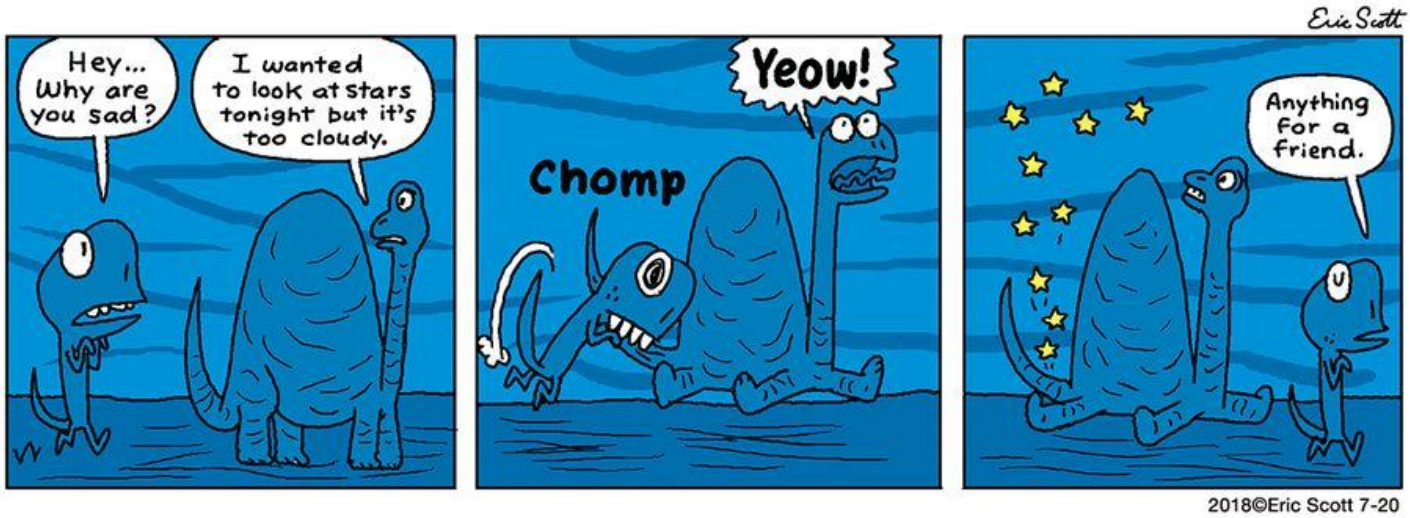
New- And Old-Style Minor Planet Designations (https://www.minorplanetcenter.net/iau/info/OldDesDoc.html)

The Tracking News

(http://www.hohmanntransfer.com/news.htm)

Accessible NEAs

(https://cneos.jpl.nasa.gov/nhats/intro.html)



Messages from HRPO

Highland Road Park Observatory

FRIDAY NIGHT LECTURE SERIES

all start at 7:30pm

4 October: "The Spooky Sampler" We're getting close to Halloween… this lecture slot will be used to highlight a smorgasbord of unsettling stories, images and theories—for our adult audience.

18 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!

SCIENCE ACADEMY

Saturdays from 10am to 12pm

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

19 October: "Fall Day" This stand-alone session allows Cadets to dive into demos and experiments not usually used for SA. Now that the Expedition sessions have come to an end, the Season Days now offer the electronic circuit board! There will also be a review of the year 2017 and the constellation Pisces.

26 October: "The Spooky Session" It's the Saturday before Halloween! Cadets will explore some of the concepts introduced during the Spooky Spectrum and experience creepy legends and tales from the annals of space exploration.

Solar Viewing

Saturday 26 October from 12pm to 2pm.

For all ages. No admission fee.

Stem Expansion

Saturday 5 October from 3:30pm to 7:30pm
Primary Topic: Astrobiology
Secondary Topic: The Dragonfly Mission
For ages twelve to sixteen. $15/$18 per kid.

This program offers advanced topics, topic extensions and all-new games and activities to an older crowd. Certificates will be earned, and a section of archived experiments, some not seen in over fifteen years (and some *never* performed on site) take place.

13th Annual Spooky Spectrum

Saturday 12 October from 6pm to 10pm
No admission fee. For all ages.

Come visit on this moonlit night—if you dare—as HRPO delves into the eerie side of astronomy, physics and aeronautics *for the twelfth 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!

Mercurian Elongation

Saturday 19 October from 5:45pm to 7:15pm
at Burbank Soccer Complex
No admission fee; for all ages.

Periodically Mercury reaches its greatest angular separation in the sky (elongation) from the Sun. This is the safest way to view Mercury by amateurs. The planet will appear as a "half-Mercury". Venus, Jupiter and Saturn will also be seen.

Natural Sky Conference

Friday 22 November from 7pm to 10pm

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 quelch 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 the 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.

BRAS says:

Support Your Local Observatory

HRPO is something our whole community pays for and we should all be proud of it And brag about it!!!

Get your 2019 HRPO T-Shirt, all sizes, $7.00
Apollo 8 "Earthrise"
Call the Observatory to place your orders.
225-768-9948 or email observatory@brec.org

White and blue on black, the design (created by HRPO Education Curator Amy Brouillette and BREC's Marketing Department) takes its inspiration from the legendary Apollo 8 "Earthrise" photo.

Observing Notes: October

by John Nagle

Pegasus – the Flying Horse

Position: RA 22 37, Dec. +19 39°

Note: For six years I have been writing these Observing Notes, featuring the 60 constellations we can see before midnight from Baton Rouge, that contain objects above magnitude 10. Beginning with the February 2019 newsletter, I began to recycle and update the constellations, but the Sky Happenings calendar and associated information are new each month.

Named Stars:

Markab (Alpha Peg), meaning "Saddle, Ship, or Vehicle" – anything ridden upon, also "Matnal", "the Horse's Withers or Shoulder", mag. 2.49, 23 04 45.62 +15 12 19.3, is a blue-white sub-giant star that has evolved beyond the main sequence. **NGC 7479** is 2.9˚ to the south. Also known as **HD 218045**, **HIP 113963**, **SAO 108378**, **HR 8781**, and **54 Pegasi**.

Scheat (Beta Peg), from "Al Sā'id", "the upper part of the arm", "Mankib Al Janb". The Horse's Shoulder", mag. 2.44, 23 03 46.33 +28 04 56.8, is a red giant star and an irregular variable (magnitudes 2.2 to 2.7). Also known as **HD 217906**, **HIP 113881**, **SAO 90981**, **HR 8775**, and **53 Pegasi**.

Algenib (Gamma Peg), possibly from "Al Janäh", "the wing", most probably from "Al Janb", "the side", mag. 2.83, 00 13 14.15 +15 11 01.0, is a blue-white sub-giant star. Also known as **HD 886**, **HIP 1087**, **SAO 91781**, **HR 39**, and **88 Peg**.

Enif (Epsilon Peg), from "Al Anf", "the Nose", also "Fum al Faras", "the Horse's Mouth", Mag. 2.38, 21 44 11.14 +09 52 30.0, is a triple star at magnitudes 2.5, 11.5, and 8.8 (orange super-giant, ?, and blue colors). Also known as **HD 206778**, **HIP 107315**, **SAO 127029**, **HR 8308**, and **8 Pegasi**.

Hamam (Zeta Peg), from "Sa'd al Humäm", "the Lucky Star of the Hero", or "Al Hammäm", "the Whisperer", mag. 3.41, 22 41 27.67 +10 49 53.0, is a blue-white main sequence star. Also known as **HD 214923**, **HIP 112029**, **SAO 108103**, **HR 8634**, and **42 Pegasi**.

Matar (Eta Peg), "on the left forearm", from "Al Sad al Matar", "the Fortunate Rain", mag.2.93, 22 43 00.13 +30 13 16.7, is a spectroscopic binary star. The companion is a dwarf star with a period of 818 days. Also known as **HD 215182**, **HIP 112158**, **SAO 90734**, **HR 8650**, and **44 Pegasi.**

Baham (Theta Peg), from "Bihäm", "the young of domestic animals (livestock)", mag. 3.52, 22 10 11.82 +06 11 52.0, is a white main sequence star. Also known as **HD 210418**, **HIP 109427**, **SAO 127346**, **HR 8450**, and **26 Pegasi.**

Sadalpheretz (Lambda Peg) – with Mu Peg, is "Sa'd al Bäri", "The Good Luck of the Excelling One", or "Sa'd al Näzi", "The Good Luck of the Camel Striving to Get to Pasture", mag. 3.97, 22 46 31.84 +23 33 56.4. Also known as **HD 215665**, **HIP 112440**, and **47 Pegasi**.

Sadalbari (Mu Peg) – with Lambda Peg, is "Sa'd al Bäri", "The Good Luck of the Excelling One", mag. 3.51, 22 50 00.10 +24 36 06.1, is a yellow giant star. Also known as **HD 216131**, **HIP 112748**, **SAO 90816**, **HR 8684**, and **48 Pegasi**.

Salm (Tau Peg), "a leathern bucket", mag. 4.58, 23 20 38.22 +23 44 25.3. Also known as **HD 220061**, **HIP 115250**, and **62 Pegasi**.
Alkarab (Upsilon Peg), from "Al Karab", "the Bucket Rope", mag. 4.42, 23 25 22.66 +23 24 14.4, is two dwarf stars eclipsing each other with an orbital period of just short of 9 hours, and a separation of 1.2 million miles (center to center). Located 3.5˚ west and slightly north of **Gamma Pegasi**. Also known as **HD 220657**, **HIP 115623**, and **68 Pegasi**.
Helvetios (51 Peg), Latin for Helvetian (Swiss), mag. 5.45, 22 57 27.8 +20 46 07.3, is a main sequence yellow dwarf star with one planet in orbit at a separation of 1.05 AU. The planet was named **Bellerophon**, but has been renamed **Dimidium**. Also known as **HD 217014**, **HIP 113357**, and **HR 8729**.

Deep Sky:

M15 (NGC 7078), mag. 6.4, 21 30 +12 10, 18' in size, is a 12 billion years old globular cluster with a high concentration of stars (100,000 plus); very bright, very large, and very well resolved. Within the cluster is a planetary nebula, **K 648** (**PK 65-27.1**) that is a weak radio source and an X-ray emitter. The X-rays are coming from a binary system of a normal star and a neutron star of 3' in diameter and a magnitude of 13.8, located at 21 27 34 +11 57 14. The nebula is also known as **Pease 1**, at a magnitude of 15.5. Located about 3.5˚ west and 2¼˚ north of **Enif** (**Epsilon Pegasi**). Also known as **Mel 234**, **C2127+119**, and the **Great Pegasus Cluster**.
HD 222454 Group, mag. 6.8, is a tight grouping of stars close to the southeastern border with **Pisces**. The mostly yellow and orange stars form a concave shape towards the west, and are named for its brightest star. It is situated just north of the dark nebula **LBN 434**.
28 Pegasi Group, mag. 9.0, is a group of stars standing out clearly against the background star field located just east of **28 Pegasi**. There are about a dozen various magnitude stars (yellow, white, and orange) with the 6.6 magnitude super white star **28 Pegasi**.
NGC 7331, mag. 9.5, 22 37.1 +34 25, 10.7'x4.0' in size, is a bright, pretty large, very elongated galaxy; almost edge on; dust lanes. Located about 4.3˚ north and slightly west of **Eta Pegasi**. **Stephan's Quintet** is 0.5˚ to the north-northeast. Part of the **Deer Lick Group**. Also known as **C30**, **UGC 12113**, and **H2-531**.
NGC 7217, mag. 10.1, 22 07.9 +31 22, 3.5'x3.0' in size, is a bright and pretty large galaxy; knotty arms; very bright, diffuse nucleus. A gas poor galaxy. A number of stars rotate opposite the majority. Also known as **UGC 11914**, and **H2-207**.
Objects of interest beyond magnitude 10:
NGC 7814, mag. 10.6, 00 03.3 +16 09, 6'x2.5' in size, is a quite bright, quite large, and elongated galaxy; edgewise dark lane; very bright bulge in the center. Also known as the **Little Sombrero Galaxy**, **UGC 8**, **C43**, and **H2-240**.
NGC 7479, mag. 10.8, 23 04.9 +12 19, 4'x3.1' in size, is a pretty bright, quite large, and very elongated galaxy; two main arms; dark lanes; very small, bright nucleus. It is a barred spiral and **Seyfert** galaxy located about 3˚due south of **Alpha Pegasi**. Also known as **C44**, **UGC 12343**, **H1-55**, and **Propeller Galaxy**.
NGC 7742, mag. 11.6, 23 44.3 +10 46, 2'x1.8' in size, is a quite bright and quite small galaxy; an extremely bright, small nucleus. It is an unbarred spiral galaxy, classified as a **Seyfert 2** type active galaxy (possible black hole in it) with a ring structure. Located about ½˚ north-northeast of the star **77 Pegasi**. Also known as **UGC 12760**, and **H2-225**.
Pegasus Dwarf Spheroidal Galaxy, mag. 12.9, 23 51 46.30 +24 34 57.0, 4'x2' in size, is a metal poor galaxy. Also known as **And VI**, **KKH 99**, **PGC 2807158**, and **Pegasus II**.
Stephan's Quintet, mag. 12.7, 22 35 57.5 +33 57 36, is an asterism composed of 5 galaxies in a circle of less than 4˚. **NGC 7317**,mag. 13.6, 22 35 51.9 +33 56 42, 2.5'x0.5' in size, also known as **MCG+6-49-01**; **NGC 7318a**, mag. 14.3, 22 35 56.74 +33 57 56, 1.7'x1.2' in size, also known as **UGC 12099**, interacting with **NGC 7318b**, mag. 13.9, 22 35 58.4 +33 57 57, 0.9'x0.9' in size, also

known as **UGC 12100**; **NGC 7319**, mag. 13.1, 22 36 03.5 +33 58 33, 1.5'x1.1' in size, has a quasar in its heart, also known as **UGC12102**; and **NGC 7320**, mag. 12.6, 22 36.1 +33 57, 1.7'x0.9' in size, is in the foreground, also known as **UGC 12101**.The quintet is also known as **Arp 319**, **VV 288**, and **HCG 92**. Not part of the quintet, but part of **HCG 92** is **NGC 7320c**, mag. 16.7, 22 36 20.4 +33 59 06. Located ½˚ south-southwest of **NGC 7331**.

Peg DIG, Pegasus Dwarf Irregular Galaxy, mag. 13.2, 23 26 36.2 +14 44 35, 5'x2.7' in size, also known as **UGC 12613**, **PGC 71538**, and **DDO 216**.

441.

Einstein's Cross, (**Huchia's Lens**), is a gravitationally lensed galaxy, mag. 16.78, behind **Zw 2237+030**, at 22 40 30.3 +03 21 31, less than 2" in size. The lensing, in 4 parts, has magnitudes of 17.36, 17.39, 14.43, and 18.72. Also known as **GSO 2237+0305**, Leda 69457, and **Z 378-15**.

NGC's 7360, 7367, 7373, and **7376** are less than 1˚ to the north. 04, 23'x13'

Taffy Galaxies, 3Zw 125, at 00 01 40.2 +23 29 23, are **UGC 12914**, mag. 13.07, 00 01 38.2 +23 29 04, 23'x13' in size, also known as **MCG+4-01-010**; and **UGC 12915**, mag. 13.95, 00 01 42.2 +23 29 42, 15'x5' in size, also known as **MCG+4-01-011**. The **Taffy Galaxies** are also known as **VV 254**, **RP 603**, and **A2359+23**.

Barbon's Galaxy, mag. 15.5, 23 37 39.5 +30 07 40. Also known as **UGCA.**

Asterism Minor (Patchick 100), 23 03 +23 13, 60' in size, also known as **Delphinus Minor.**

Great Square of Pegasus, is an asterism composed of **Markab** (**Alpha Pegasi**) in the southeast corner, **Scheat** (**Beta Pegasi**) in the northeast corner, **Algenib** (**Gamma Pegasi**) in the southwest corner, and **Alpheratz** (**Alpha Andromedae**) in the northwest corner.

Other objects in Pegasus are as follows: 318 NGC; 330 UGC; 80 IC; 222 MCG; 57 CGCG; 7 HCG; 8 AGC; 4 Alessi; 24 Arp Peculiar Galaxies; 21 VV; 3 Ring Galaxies; 18 Galaxy Trios; 8 Flat Galaxies; 1 Variable Galaxy; 5 Small Galaxy Groups; 3 Caldwell; 1 Pal; 3 Mrk; 1 Picot; 1 Pease; 1 Jones; 1 Patchick; 1 Renou; 1 Mel; 1 PG; 2 P; 1 Ballanot; 1KKH; 1 HS; 17 Quasar; and 13 Radio Galaxies.

Other Stars:

HD 210702, mag. 5.93, 22 11 51.33 +16 02 26.1, has one planet in orbit. Also known as **HIP 109577**.

HR 8799, mag. 5.97, 23 07 28.65 +21 08 03.7, has four planets in orbit. Also know as **HD 218396**, **HIP 114189**, and **V342 Pegasi**.

IK Peg, mag. 6.08, 21 26 26.61 +19 22 32.2, is a close binary consisting of a main sequence star and a white dwarf star (**IK PegB**) with a period of 21.7 days. This is the nearest supernova progenitor candidate to **Earth**.

HD 220773, mag. 7.09, 23 26 27.0 +08 38 38, has one planet in orbit. Also known as **HIP 115697**.

V376 Peg, mag. 7.65, 22 03 10.77 +18 53 03.6, has the first planet discovered by transiting. The planet, named **Osiris**, orbits at 7 million kilometers (or 0.047 AU) and has a period of 3.5 days. Also known as **HD 209458**, **HIP 108859**, **SAO 107623**, and **BD+18˚4917**.

HD 219828, mag. 8.02, 23 18 46.73 +18 38 44.6, has one planet in orbit. Also known as **HIP 115100**.

BD+14˚4559, mag. 9.66, 21 13 35.99 +14 41 21.8, has one planet in orbit. Also known as **HIP 104780**.

Beyond magnitude 10 are the following stars with a transiting planet in orbit: HAT-P-8; WASP-21; Wasp-60; WASP-52; WASP-10; and WASP-59. V391 Peg has a planet in orbit. Pegasus also has the following objects: 43 Σ; 5 OΣ; 1 OΣΣ; 1 ΣI; 1ΣII; 2 Ho; 29 V; 3 h; 16 A; 7 β; 1 Winnecke; 1 AG; 1 Cou; 2 Hu; and 1 ES.

Sky Happenings:October, 2019

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

Oct. 2nd - **Pluto** is stationary at 4 PM CDT,
Venus passes 3˚ north of **Spica** at 8 PM CDT.

Oct. 3rd - The **Moon** passes 1.9˚ north of **Jupiter** at 3 PM CDT,
Dusk: The waxing crescent **Moon** and **Jupiter** are about 1.5˚ apart in the sky shortly after sunset with **Antares** some 10˚ to the pair's lower right.

Oct. 4th - Dusk: **Saturn**, the **Moon**, **Jupiter**, and **Antares** extend along a shallow arc 34˚ long stretching from the south to the southwest as evening falls.

Oct. 5th - **First Quarter Moon** occurs at 11:47 AM CDT,
The **Moon** passes 0.3˚ south of **Saturn** at 4 PM CDT,
Dusk: The first quarter **Moon** and **Saturn** hover in **Sagittarius** between the **Teapot's** handle and the **Teaspoon**, with 2˚ separating the pair.

Oct. 6th - The **Moon** passes 0.1˚ south of **Pluto** at 4 AM CDT.

Oct. 10th - The **Moon** is at apogee (252,214 miles or 405,899 km from **Earth**) at 1:29 PM CDT,
The **Moon** passes 4˚ south of **Neptune** at 6 PM CDT.

Oct. 13th - Asteroid **Amphritrite** is at opposition at 8 AM CDT,
Full Moon occurs at 4:08 PM CDT (the smallest for 2019).

Oct. 14th - The **Moon** passes 4˚ south of **Uranus** at 7 PM CDT.

Oct. 17th - Evening: The waning gibbous **Moon** rises in **Taurus** about 2½ hours after sunset, with **Aldebaran** some 3˚ to 4˚ to its right or upper right.

Oct. 19th - The **Moon** is 1.7˚ south of **M 35** at 11 AM CDT,
Mercury is at greatest eastern elongation (25˚) at 11 PM CDT.

Oct. 21st - **Last Quarter Moon** occurs at 7:39 AM CDT.

Oct. 21st/22nd - The **Orionid Meteor Shower** peaks with the waning crescent **Moon**, about 40% lit, rising before midnight,
The **Moon** is 0.7˚ north of **M 44** (**the Beehive**) at 12 PM (midnight).

Oct. 25th - Asteroid **Metis** is at opposition at 4 PM CDT.

Oct. 26th - Dawn: The thinnest sliver of the almost-new **Moon**, **Mars**, and **Porrima** form a triangle in **Virgo**, low on the eastern horizon just before sunrise,
The **Moon** is at perigee (224,508 miles or 361,311 km from **Earth**) at 5:39 AM CDT,
The **Moon** passes 5˚ to the north of **Mars** at 12 Noon CDT.

Oct. 27th - **New Moon** occurs at 10:38 PM CDT.

Oct. 28th - **Uranus** is at opposition at 3 AM CDT.

Oct. 29th - The **Moon** passes 4˚ north of **Venus** at 9 AM CDT,
The **Moon** passes 7˚ north of **Mercury** at 10 AM CDT,
Dusk: Right after sunset look toward the southwest to find the **Moon**, not quite 2 days old, and **Venus** less than 5˚ apart.

Oct. 30th - **Mercury** passes 3˚ south of **Venus** at 3 AM CDT.

Oct. 31st - The **Moon** passes 1.3˚ north of **Jupiter** at 9 AM CDT,
Mercury is stationary at 3 PM CDT.

Planets:

Mercury – Mercury, close to zero magnitude all month, is very difficult to sight being so low in twilight, never setting as much as an hour after the **Sun**. Most of the month the planet will spend not too far to the upper left of **Venus**, reaching greatest eastern elongation of 24.6˚ from the **Sun** on October 19th. On the 31st, **Mercury** passes around 2½˚ below **Venus**, and then will fall and fade away rapidly on its way to its transit of the **Sun** on November 11th.

Venus – Venus will set about ½ hour after the **Sun** as October starts, and only about 1 hour after the Sun as the month ends. The planet, at magnitude -3.9 during the first half of the month and -3.8 during the second half, is almost fully lit, but is near its minimum angular diameter of 10". **Venus** is too low in the southwest after sunset, standing only 2˚ high in mid-October. On the 29th, **Mercury** will slide 3˚ due south (lower left) of **Venus**, with the 2 day-old crescent **Moon** standing 8˚high a half-hour after sunset, with **Venus** 5˚ to its lower right and **Mercury** 6˚ directly below the **Moon**.

Mars – Mars returns to visibility in mid-October, after having been lost in the solar glare since mid-July. The planet will rise only about 50 minutes before the **Sun** on October 1st, but about 1¾ hours before the

Sun on the 31st. The planet currently shines at magnitude 1.8, and its disk appears as small as that of **Uranus**. On October 7th, **Mars**, now in **Virgo**, will cross southward over the celestial equator – it is also the day the northern hemisphere of **Mars** experiences its summer solstice.

Jupiter – Jupiter, on October 1st at magnitude -2.0, will stand 20˚ above the southwest horizon an hour after sundown and doesn't set until 10 PM local daylight time. Dipping lower with each passing day, the planet drops below the horizon at 8:30 PM by month's end. **Jupiter** resides among the background stars of **Ophiuchus**. On October 3rd, the **Moon** appears 2˚ to the planet's upper left, and on the 31st, a noticeably skinnier crescent **Moon** stands 5˚ to the planet's upper left. In mid-October, the planet's disk will span 35". There are double shadow transits on the 10th, 13th, 21st, 24th, 26th, 28th, and 31st. For a listing of all of **Jupiter**'s moons phenomena, see the October issue of ***Sky and Telescope*** – page 51, or the ***RASC Observer's Handbook***, **2019 USA Edition**, page 236.

Saturn – Saturn lies against the backdrop of **Sagittarius**, and is almost 30˚ high in the dusk as October begins. The planet shines at magnitude 0.5, standing out nicely between the **Teapot** and **Teaspoon** asterisms. The planet reaches eastern quadrature (90˚east of the **Sun**) on October 7th. Any telescope will show the planet's 16" diameter disk and the ring system that spans 37" and tilts 25˚ to our line of sight. The moon **Titan**, at 8th magnitude, will show up through any telescope – you can find the moon north of **Saturn** on the 1st and 17th, and south of the planet on the 9th and 25th. You will need a four-inch or larger instrument to see the moons **Tethys**, **Dione**, and **Rhea** – they can be found inside the orbit of **Titan**. The moon **Iapetus**, glowing at 10th magnitude, is at greatest western elongation on the night of October 1st/2nd. It then lies 8.5' from the planet, and will dim to 11th magnitude as it passes north of the planet on the 22nd.

Uranus – Uranus reaches opposition on the night of October 27th/28th, rising around sunset and setting near sunrise. The planet remains at magnitude 5.7 all month, and its disk spans 3.7" all month. The planet resides in southern **Aries**. **Uranus** is about 3.8˚ north of **Xi Ceti**, and will show a distinctive blue-green color on a disk of 3.7" when observed.

Neptune – Neptune, in eastern **Aquarius**, will stand 30˚ above the southeast horizon as twilight ends in mid-October, climbs half-way to the zenith in the south around 10:30 PM local daylight time, and not setting in the west until 4 AM. The magnitude 7.8 planet, in eastern **Aquarius**, is in the same binocular field as the 4th magnitude star **Phi Aquarii**. This star is about 15˚ southeast of **Aquarius'**s distinctive **Water Jug** asterism. On October 1st, the planet lies about 0.7˚ west-southwest of this star. By the 31st, the planet will be 1.3˚ west-southwest of **Phi Aquarii**. When observed, **Neptune** shows a subtle blue-grey color with a 2.3" diameter disk.

Pluto – Pluto is in **Sagittarius** near **Saturn**. **Pluto's** position, ***by my estimates***, are as follows: On October 3rd – 26.5' west and a little north of the star **HD 183431**; on the 15th – about 23.5' west and a little north of **HD 183431**; and on the 31st – about 15.5' west and a little north of **HD 183431.**

Moon – The **Moon** is a waning crescent well to the upper right of **Antares** on October 2nd, and to the upper left and close to **Jupiter** at nightfall on the 3rd. On the 5th, the **Moon**, just a few hours after its first quarter phase, is 2˚ or less to the lower left of **Saturn** at nightfall. The waning gibbous **Moon** will rise some 3˚ to 4˚ to the left of **Aldebaran** on the evening of the 17th. On the morning of the 21st, at or near its last quarter phase, the **Moon** is almost perfectly lined up with **Castor** and **Pollux**.

Librations: Longitude – East limb most exposed on the 4th (+7.9˚)
West limb most exposed on the 20th (-6.1˚)
Latitude - North limb most exposed on the 13th (+6.6˚)
South limb most exposed on the 27th (-6.5˚)

Asteroids **–** Asteroid **29 Amphitrite** will reach opposition and peak visibility on the 13th, glowing at magnitude 8.7 among the background stars of **Pisces**. Best views are when it climbs ⅔ the way to the zenith in the southern sky around midnight local daylight time. **Amphitrite**'s position, ***by my estimates***, are as follows: On October 1st - 4˚ north and a little east of **Zeta Piscium**; on the 6th – about 3½˚ almost due north and a little west of **Zeta Piscium**; on the 11th – about 3½˚ north-northeast of **Epsilon Piscium**; on the 16th – just over 3˚ due north of **Epsilon Piscium**; on the 21st - 3˚ north-northwest of **Epsilon Piscium**; on the 26th - 3˚ north-northeast of **Delta Piscium**; and on the 31st – 2.7˚ due north of **Delta Piscium**.

Asteroid **Psyche**'s position, ***by my estimates***, are as follows: On the 3rd – about 5.6˚ west-northwest and a little north of **Theta Capricornus**; on the 15th – about 4½˚ west-northwest of **Theta Capricornus**; and on the 27th – about 2.6˚ west-northwest of **Theta Capricornus** – about 0.2˚ north-northwest of a 5th magnitude star.

Asteroid **Eunomia**'s position, ***by my estimates***, is as follows: On October 3rd – about 1˚ west-southwest of **4 Aquarii**; on the 18th – about 0.6˚ southeast of **4 Aquarii**; and on the 27th – about 2˚ east of **4 Aquarii**.

Asteroid **Laetitia'**s position, ***by my estimates***, is as follows: On October 3rd – about ½˚ south-southeast of **29 Capricornus**; on the 15th – about 1.4˚ southeast of **29 Capricornus** or 0.8˚ north-northwest of **Tau Capricornus**; and on the 27th - 3˚ southeast of **29 Capricornus** or 1.4˚ east-northeast of **Tau Capricornus**.

Comets **–** Comet **Africano** (**C/2018 W2**) peaked at 9th magnitude when it came closest to **Earth** on the 27th of September, and should maintain this magnitude into early October. On October 1st, you can find the comet 2˚ southwest of the 5th magnitude star **Kappa Piscium**, and on the 7th about 2˚ northwest of the 3rd magnitude star **Delta Aquarii**. Other positions, ***by my estimates***, are as follows: On October 3rd – about 1½˚ west of **Phi Aquarii**; on the 5th – about 3½˚ south-southeast of **Lambda Aquarii**; and on the 9th – about 5½˚ southwest of **Delta Aquarii**.

Meteor Showers **–** The **Orionid Meteor Shower** will peak on the night of October 21st/22nd, less than 24 hours after **Last Quarter Moon**. The **Moon**, waning to a fat crescent, will rise about 12:30 AM local daylight time, and will drown out fainter meteors during the peak observing hours. The **Orionids** typically have a rate of up to 20 meteors per hour, but the **Moon** will cut that number in half.

When to View the Planets:

Evening Sky		**Midnight**		**Morning Sky**	
Mercury	**(southwest)**	**Uranus**	**(southeast)**	**Mars**	**(east)**
Venus	**(southwest)**	**Neptune**	**(southwest)**	**Uranus**	**(west)**
Jupiter	**(southeast)**				
Saturn	**(south)**				
Uranus	**(east)**				
Neptune	**(northeast)**				

DARK SKY VIEWING - PRIMARY ON OCTOBER 26TH, SECONDARY ON OCTOBER 5TH – FIRST QUARTER MOON

Mythology

Pegasus – The Flying Horse

Like this poster? It is available here: https://fineartamerica.com/featured/pegasus-babette-van-den-berg.html

Pegasus was the winged horse best known for his association with the Greek hero Bellerophon. The manner of the horse's birth was unusual. Its mother was Medusa, the Gorgon, who in her youth was famed for her beauty, particularly her flowing hair. Many suitors approached her, but the one who took her was Poseidon, who is both god of the sea and god of horses. Unfortunately, the seduction happened in the temple of Athena. Outraged by having her temple defiled, the goddess Athena changed Medusa into a snake-haired monster whose gaze could turn men into stone.

Perseus was sent to kill Medusa by King Polydectes of Seriphus, who was the brother of Dictys, the man who took Perseus and his mother Danae in and raised Perseus as his own son. Polydectes wanted Danae for himself and Perseus stood in his way because he defended his mother from the king's advances. The king did not expect the Hero to come back from his mission alive.

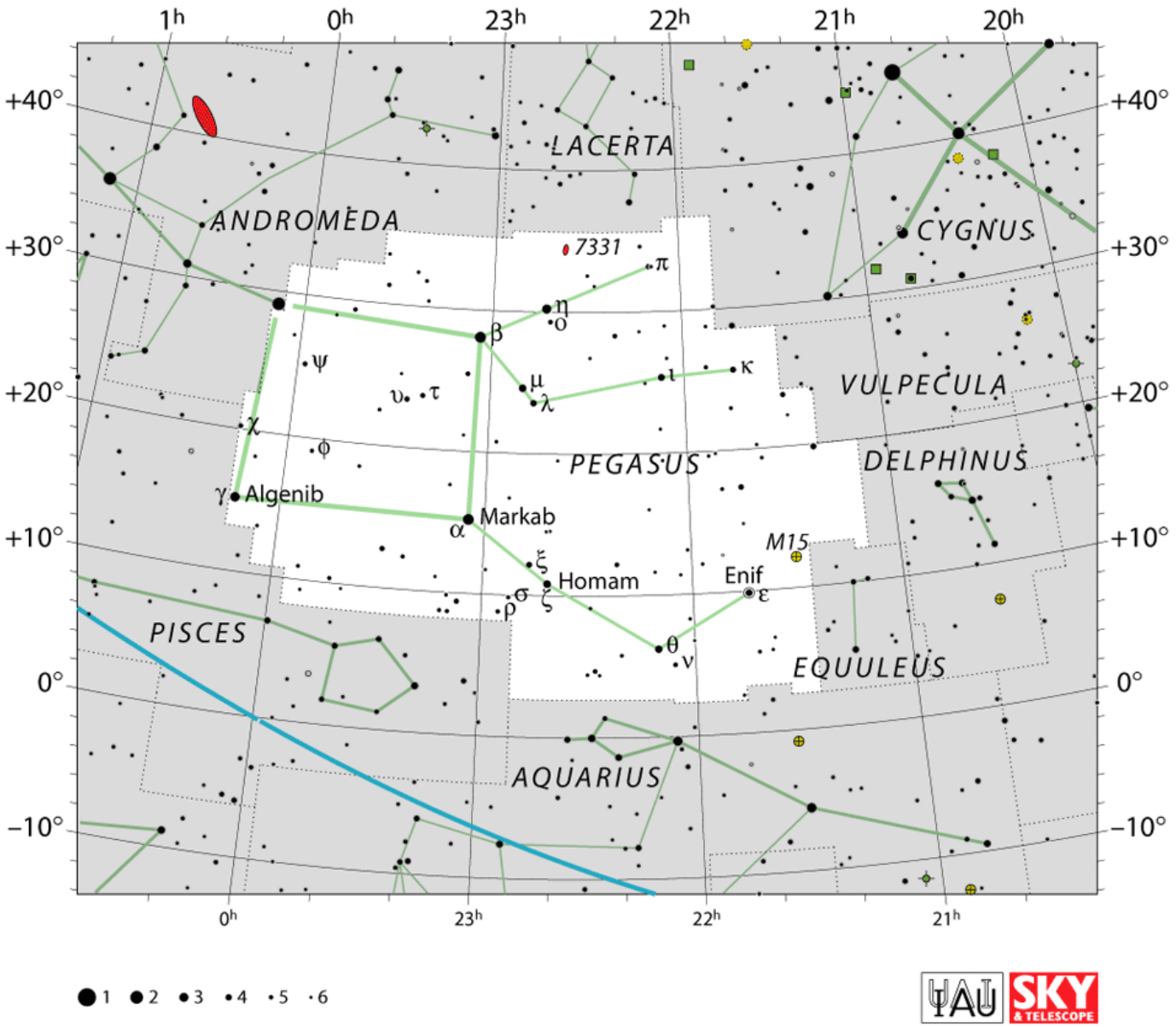
When Perseus decapitated Medusa, Pegasus and the warrior Chrysaor sprang from her body. The name Pegasus comes from the Greek word pegai, meaning "springs" or "waters". Chrysaor played no further part in the story of Pegasus; he later became the father of Geryon, the three body monster whom Heracles slew.

When he was born, Pegasus flew away to Mount Helion in Boeotia, where the Muses lived, and he befriended them. He created a spring that was named Hippocrene, by striking the ground with his hoof. The name Hippocrene means "The Horse's Fountain". It was said that those who drank from the spring were blessed with the gift to write poetry.

The most famous myth involving Pegasus is the one of Bellerophon, the hero who was sent by King Iolates of Lydia to kill the Chimera, a monster that breathed fire and was devastating the king's land. Bellerophon found Pegasus and tamed him using a golden bridle given to him by the goddess Athena. Then he swooped down on the Chimera from the sky and killed the monster with his lance and arrows. After this and several other heroic deeds for King Iolates, Bellerophon let the success get to his head.

Riding Pegasus, he tried to fly to Olympus and join the gods. He did not succeed. He fell off the horse and back to Earth.

Pegasus did, however, make it to Olympus. There Zeus used the horse to carry his thunder and lightning, and eventually placing him among the constellations.



The End