



Covid photo courtesy of the Center For Disease Control and Prevention.

Monthly Meeting May 11th at 7:00 PM, at HOME

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

PRESENTATION: *(Meeting to be held via Zoom Webinar, due to current COVID-19 Quarentine)*
Our speaker will be Greg Andrews, on Dark Matter. He is a former president of the Shreveport-Bossier Astronomical Society and the Planetarium Manager at Sci-Port Discovery Center in Shreveport.

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

President's Message

And that was April. Despite adverse conditions at times, we had some absolutely stunningly clear nights over the past couple of weeks so I hope everybody found some time to go out and do a little observing or imaging. With a little bit of luck, we can get a few more of these evenings after our quarantine is over so we can get in a little more scope time before the mosquitoes muster their numbers. Unfortunately, April saw the loss of two very promising comets, but we were introduced to a new Comet in Swan, which early indications suggest could be a pretty nice early evening comet. Most of the pictures I've seen of it show a very nice tail, too, which is something that Atlas and T2 didn't really have. But, time will tell. It's been a long time since we had a nice bright comet and I think we're due.

The April meeting was a little bit different but I think most people thought it was a pretty good program and that it more or less went fairly well. With the shelter order having been extended for another couple of weeks, we've decided that we'll just try the ZOOM format for the May meeting and hope that by June we'll be back at the observatory—keep tuned to see if that can work out. The invites for the May meeting will go out the day before, so if you haven't received it by then or need help logging in, check with Ben. This month's speaker should be a pretty good one, and it will focus on Dark Matter.

For a while now, we've been talking about creating some digital record of our general meetings and posting them online, and now that we've set up our very own BRAS YouTube channel, this seems the perfect place to upload this content. I think that going forward, we'll try to record and post our meetings so that the people who can't make it out in person will still get a chance to join us.

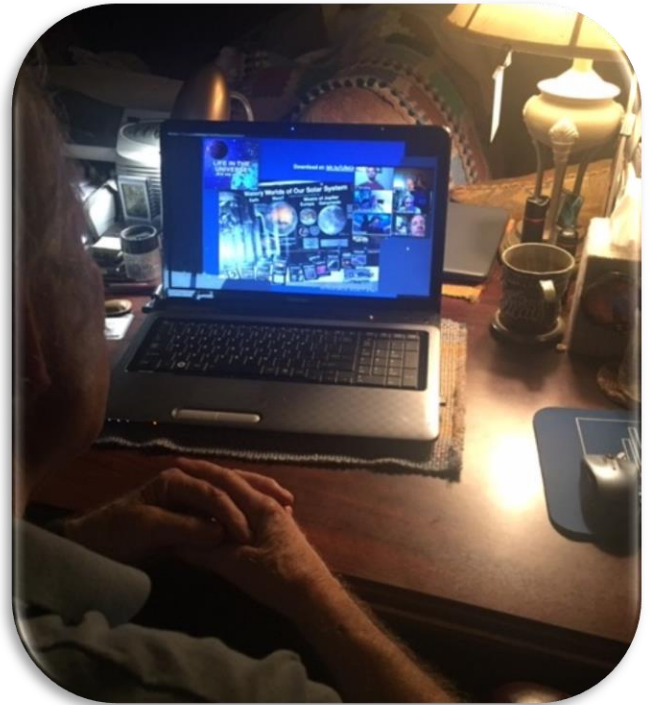
So far, it looks like club events in May, at least for the first half, have been cancelled. Astronomy Day nationwide, and at HRPO is postponed by the AL to the fall.

The raffle for the 8" Dobsonian has been moved to the night of Spooky Spectrum in October, so don't think you've missed your chance to get an awesome scope for the cost of a \$5 ticket and a little bit of luck. I'm not sure when tickets will go on sale, so again, stay tuned.

So far, we haven't figured out when our next members only night at the observatory will be, but we are still trying to schedule an event for spring. At last check, Chris seems a little weary of crowding people into the dome, so this event may be limited to just people who want to set up scopes outside. We'll figure this out at the meeting next week, and let everybody know what the plan is. There also seems to be some exciting plans being worked out on how to safely do outreach at the observatory before the end of the summer, but we're going to have to let Chris fill us in on the details there.

I hope everybody is keeping well, and I hope to see many of you at the meeting on the 11th.

Submitted by Scott Cadwallader, President 2020



April's meeting and guest speaker David Prosper's NSN presentation was delivered to members in their homes via Zoom. Another FIRST for BRAS!

ALCon 2020 Postponment

As of 4/3/2020, ALCon 2020 has been postponed to August 4-7, 2021, as ALCon 2021.

Secretary's Summary of April Meeting

The April meeting was held via Zoom on 4/15/2020, as our city was in quarantine due to Covid 19. Still, 22 people attended the meeting, and we covered a lot of territory:

Announcements:

John Nagle: Texas Star Party is cancelled for 2020

Scott C: Going to keep outreach going while not putting anyone in danger.

HRPO is closed for the next two weeks

There are two comets breaking up currently

IAD is iffy, per the governor's comments, (since been cancelled)

Asteroid Day is the next big event.

We should be able to stream public meetings in the future

Coy W. attested that SkySafari is a very good app (free version) for finding constellations and other natural sky phenomena

Chris D. says there is a ¼ moon now and moonrise is not until 1 a.m.

Thomas asked if the Trophy House nametags are ready for us?

Coy W. introduces Dave Prosper of NSN, who presented many details about NSN's accomplishments. For example, NSN is 400+ clubs strong; they have held 56,000 events since 2004, and so forth.

Meeting adjourned at 8:39 p.m.



Submitted by Thomas Halligan, Secretary

2020 Officers:

President: Scott Cadwallader

Vice-President: Coy Wagoner

Secretary: Thomas Halligan

Treasurer: Trey Anding

BRAS Liaison for BREC:

Chris Kersey

BRAS Liaison for LSU:

Greg Guzik

Committees/Coordinators:

AL Awards

Merrill Hess

Light Pollution:

John Nagle

Newsletter:

Michele Fry

Observing:

John Nagle

Outreach:

Ben Toman

Public Information

Krista Reed

Webmaster:

Frederick Barnett

Upcoming BRAS Meetings:

NSN Training Kit Session, Postponed

Monthly Business Meeting: 7:00 p.m., Wednesday, May 6; via Zoom webinar

Light Pollution Committee Meeting: 6:15 Wednesday, May 6 (before the business meeting, via Webinar (TBA))

Monthly Member Meeting: 7:00 Monday, May 11; via webinar due to COVID-19 quarantening.

Star Party at Chris Desselles' house, postponed

MOON (Members Only Observing Night), TBA



Hi Everyone,

Well, you may think there's not much Outreach to report this month due to all of us being on Covid lockdown, but that would be WRONG-O!!!!. Because I am happy to announce.....

We finally started a BRAS YouTube channel and are livestreaming and making videos for teachers and families.

<https://www.youtube.com/channel/UCS3Xkk1t7C9IRnB8GKrt9MQ>

Here's how it happened.

I often do a livestream via our **BRAS Facebook** page when we have our monthly Sidewalk Astronomy event at Perkins Rowe. Since it was a beautiful, clear night on Tuesday, March 31st (when one of our events would have been held), I decided to go ahead with a livestream from my front yard. The Moon in phase is always impressive and it's VERY impressive to those that aren't used to seeing it magnified through a telescope. I use a simple mount to attach my smart phone to a telescope eyepiece and then it's just a matter of working the focus and dialing in the exposure setting to have a great look at the Moon. (In fact, with a polarizing filter, I was even able to show off Venus for a little bit.)

A grade school teacher friend of mine in Michigan happened to tune in to the livestream. She later sent me a message asking if I would do a video for her school's students about the Moon as something they could use to supplement their distance learning curriculum. Of course, I HAD to do it! That's what started a ball rolling for the club to establish a BRAS YouTube channel (something that we've been meaning to do for a long time) and there are now two videos up there.

Where do the Stars Go During The Day

Let's Learn About The Moon

They are pretty basic knowledge videos, but fun. The highlight in both is actually having some real-time footage looking through a telescope at some of the things described in the mini talk beforehand. The videos are published as "For Kids" and are of course, all ages appropriate. Also, because of the "For Kids" designation, comments are automatically turned OFF. This works well in two ways. 1. It saves us from having to monitor the comment section for inappropriate comments from the general public. 2. I don't have to deal with criticism from internet trolls!



From my Living Room



Comparing the size of the sun to the planets.

so we sometimes take that for granted. But our friends/family that don't have scopes (or know anything about them) don't have that opportunity. Think about sharing some of your love for astronomy with them. You never know, you may just start the ball rolling for THEM!

We get to look at something like the Moon whenever we want, so sometimes we take it for granted. But others who don't have scopes don't have that opportunity.

Check out the two videos on our YouTube channel, and please SUBSCRIBE. I'm already thinking of new topics that would be great for educational outreach, and also for some that would be great for those new to astronomy. I'm not sure yet how we might add videos from other members, but that will be coming up for discussion soon.

I can't wait to get back in public, though, and see that WOW! moment firsthand when you show someone an awesome object in our night sky.

Clear Skies,
Ben Toman

Now is a great time to start dipping your toes in the pool of Outreach. I've already seen several other members sharing videos, livestreams and pictures via their social media. You can do the same thing. If you have a telescope and a camera (phone or other), this is the time to announce to your friends, family and co-workers that you love astronomy! Whether you do a livestream, or just take a quick snap of the Moon and text/email it to a friend or family member, that's a form of Outreach. We get to look at something like the Moon whenever we want



Looking through the tube at the Moon by Day, from my front yard



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..

There was no LPC meeting in April due to the Corona Virus

A handwritten signature in black ink that reads "John R. Nagle". The script is fluid and cursive.

Submitted by John R. Nagle

Globe At Night

The target for this month's Globe at Night program is **Leo from May 14th through the 23rd**.
If you would like to participate in this citizen science program, you can find instructions at
<https://www.globeatnight.org>

[Here is a handy 2020 GlobeatNight Post card, in case you are out and about at night.](#)

A poster for the 2020 Globe at Night event. It features a large, stylized star made of dots in the top left corner. The text "GLOBE AT NIGHT 2020" is prominently displayed. Below this, the website "WWW.GLOBEATNIGHT.ORG" is listed, followed by the slogan "Get Out and Observe the Night Sky!". A list of dates for each month is provided in two columns. At the bottom, there are logos for the NSF's National Optical-Infrared Astronomy Research Laboratory, the International Dark Sky Association (IDA), and the American Astronomical Society (AURA). The background of the poster is a dark blue space with a view of Earth from space, showing city lights and the atmosphere.

January 16 – 25	July 12 – 21
February 14 – 23	August 10 – 19
March 14 – 24	September 9 – 18
April 14 – 23	October 8 – 17
May 14 – 23	November 7 – 16
June 13 – 22	December 6 – 15

P.S. The “Loss of the Night” app can be used for information and for reporting your observations

Flying “Rocks” and “Dirty Snowballs”:

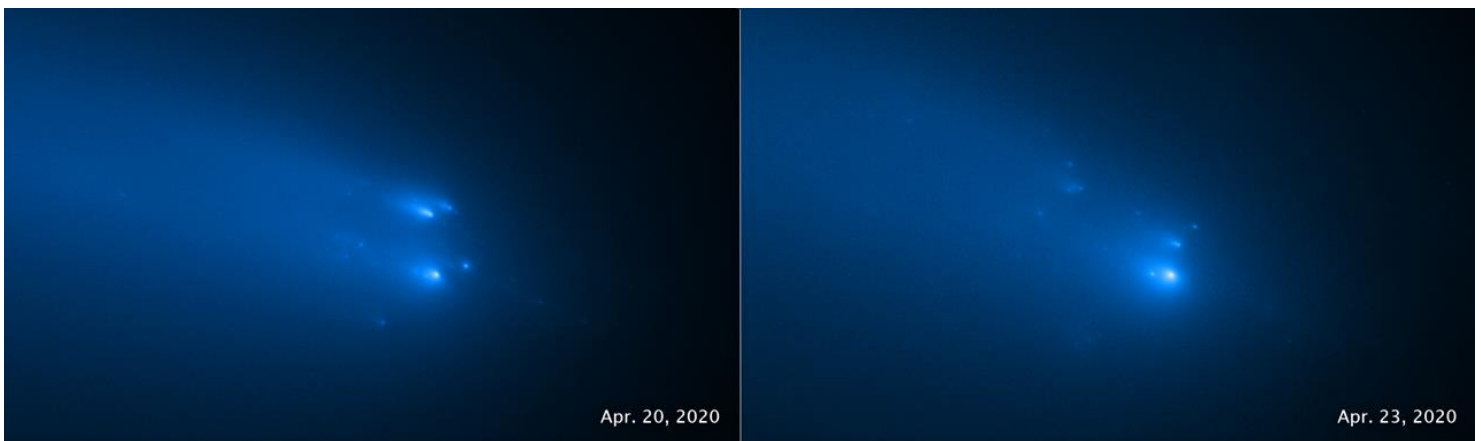
Asteroid and Comet News

May 2020

Volume 2, Issue 5.

Comet ATLAS (C/2019 Y4) has fragmented.

The comet many were hoping would put on a great show has fragmented and has faded.



Two new images from Hubble show the doomed comet C/2019 Y4 (ATLAS). Taken on April 20 and 23, 2020, they provide the sharpest views yet of the comet's solid icy nucleus breaking apart into as many as 30 pieces that are each roughly the size of a house.

The comet was discovered on Dec. 29, 2019, by the ATLAS (Asteroid Terrestrial-impact Last Alert System) robotic astronomical survey system based in Hawaii. The comet's fragmentation was confirmed by amateur astronomer Jose de Queiroz, who was able to photograph around three pieces of the comet on April 11. With its crisp resolution, Hubble has a front-row seat to look for more pieces. And astronomers weren't disappointed with what it saw.

Scientists know that the comet's nucleus — the fountainhead of the glamorous tail — is a fragile cluster of ices and dust. However, astronomers don't know why some comets break apart like exploding aerial fireworks shells. Could the warming influence of the Sun cause a comet to become unglued as it enters the inner solar system? Or could the icy nucleus spin up as it shoots out jets of warming gases, causing it to fly apart?

The disintegrating comet was approximately 91 million miles (146 million kilometers) from Earth when the latest Hubble observations were taken. If any of it survives, the comet will make its closest approach to Earth on May 23 at a distance of about 72 million miles (116 million kilometers). Eight days later it will skirt past the Sun at 25 million miles (40 million kilometers).

Credit: NASA, ESA, D. Jewitt (UCLA), and Q. Ye (University of Maryland)

More go.nasa.gov/3aQXggO

<https://www.flickr.com/photos/gsfrc/49832598833/>

[JPL Close Approach Data](#) from Mar 31, 2020 to Apr 28, 2020 Distance Nominal < 1 Lunar Distance

Object	Close-Approach (CA) Date	CA Distance Nominal LD (au)	H (mag)	Estimated Diameter
(2020 FB7)	2020-Mar-31	0.20 (0.00052)	26.1	16 m - 36 m
(2020 GO1)	2020-Apr-01	0.18 (0.00046)	27.6	7.9 m - 18 m
(2020 GH)	2020-Apr-03	0.33 (0.00084)	29	4.2 m - 9.3 m
(2020 GY1)	2020-Apr-05	0.21 (0.00054)	26.6	13 m - 28 m
(2020 HO)	2020-Apr-15	0.75 (0.00193)	28.8	4.6 m - 10 m
(2020 GH2)	2020-Apr-15	0.93 (0.00240)	26.6	13 m - 28 m
(2020 HM6)	2020-Apr-22	0.42 (0.00109)	26.6	13 m - 28 m
(2020 HF5)	2020-Apr-22	0.38 (0.00098)	26.7	12 m - 27 m
(2020 HU7)	2020-Apr-22	0.34 (0.00087)	29.6	3.1 m - 7.0 m
(2020 HX3)	2020-Apr-24	0.66 (0.00169)	27.2	9.8 m - 22 m
(2020 HT8)	2020-Apr-26	0.38 (0.00099)	28.3	5.8 m - 13 m
(2020 HP6)	2020-Apr-27	0.33 (0.00084)	28.1	6.4 m - 14 m
(2020 HS7)	2020-Apr-28	0.11 (0.00029)	29.2	3.9 m - 8.8 m

As of 2020-05-01 there is

930,248 discovered asteroids (MPC)(<https://www.minorplanetcenter.net/>)

[545,135 have been numbered](<https://minorplanetcenter.net/iau/lists/NumberedMPs.html>)

22,822 discovered Near-Earth Objects (MPC) (<https://www.minorplanetcenter.net/>)

4,155 discovered Comets (MPC)(<https://www.minorplanetcenter.net/>)

1,021 objects listed on JPL's Sentry: Earth Impact Monitoring(JPL) (<https://cneos.jpl.nasa.gov/sentry/>)

2,467 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 2020-02-26 to 2020-03-31

Object Designation	Removed (UTC)
2020 HM6	2020-04-30 14:01:49
2020 HE7	2020-04-29 14:57:40
2020 HQ6	2020-04-29 14:28:56
2020 HJ6	2020-04-28 19:27:54
2020 HV5	2020-04-28 14:52:16
2020 HZ4	2020-04-26 14:46:09
2020 HT4	2020-04-25 14:51:03
2020 HK3	2020-04-25 14:33:58
2020 HE	2020-04-23 14:33:29
2020 HM1	2020-04-22 15:48:13
2016 JT38	2020-04-22 15:31:25
2015 HV182	2020-04-21 00:05:32
2020 FV6	2020-04-13 13:32:26
2020 BA15	2020-04-10 14:00:43

2020 CE1	2020-04-09 13:58:32
2019 DS1	2020-04-04 16:07:00

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>)



Recent Entries in the BRAS Forum

Below are selected additions to the BRAS Forum. There are also nine active polls. The Forum has reached 6500 posts.

- A Statement of [Gratitude](#)
- The [NASA Worm](#) Returns
- More [Binocular Suggestions](#) for Those Staying at Home?
- [Great Martian Opposition](#) Underway
- [Venus and Pleiades](#) Meet in Stunning Conjunction
- [Juno Mission](#) Extended into 2021
- Thirtieth Anniversary of [Mount St. Helens](#) Spurs Memory
- [Starlink](#) Continues to Pose Problems
- Evening Strollers Treated to [Venus' Greatest Evening Brilliancy](#)
- Will Virus Outbreak Alter [Artemis Timeline](#)?
- NASA Seeks [New Astronauts](#)
- First Full Moon of Spring was [Supermoon!](#)
- [Asteroid 3 Juno](#) Reaches Opposition
- [2020 HJ6](#) Swinging By Earth
- Antarctic Witnesses [Lunar Occultation of Pluto](#)
- [Comet ATLAS](#) Crumbles
- Predict [Vega](#)'s Rising Location
- [Betelgeuse](#) Back to Normal?
- More Refined [Diameter of Milky Way](#) Announced
- [Lunar Gateway](#) to be "Studio Apartment" for Moon Explorers



Messages from HRPO

Highland Road Park Observatory

ALERT: There will be no on-site programming at HRPO before 16 May. (International Astronomy Day has been canceled.) The remaining schedule is dependent on the rate of virus infection cases between now and 15 May, and of the response to that rate from various levels of government. Any programs that take place may have temporary rules in place regarding spacing between strangers.



SCIENCE ACADEMY

from 10am to 12pm

for ages eight to twelve / \$5 or \$6 per child depending on Parish

16 May: Meteor Showers Cadets will learn where meteorites originate, and how to see meteor streaks fly through the atmosphere.

30 May: The Artemis Program We're going back to the Moon! Cadets will find out why we've stayed away so long, and get a sneak preview of the astonishing Gateway that will serve as the "studio apartment" for future lunar landscape explorers.



SOLAR VIEWING

Saturday 16 May from 12pm to 2pm.

For all ages. No admission fee. 20OGS Tour at 1pm.

(Solar Viewers, \$2 each. Add-on Activity: \$2.50.)

The hobby of astronomy immediately brings to mind thoughts of darkened backyards and dimly-lit nighttime activities at HRPO. But patrons also have the option of visiting during daylight hours to see our parent star.

Weather permitting, once monthly HRPO personnel offers three views of the Sun...

12pm to 12:30pm - *indirect projection onto white viewing surface* // Patrons get a sense of the speed of Earth's rotation as they see the Sun's image slide on or off the projection device. [Learning Technologies Sunspotter]

12:15pm to 1:15pm - *safely-filtered optical light sent through standard telescope* // This option allows patrons to spy sunspots both small and large. [Orion 10" Skyquest Dobsonian Reflector]

12:30pm to 2:00pm - *hydrogen-alpha light* // Flares and prominences are seen easily in this wavelength. [Coronado Solar Max II 90mm]



FRIDAY NIGHT LECTURE SERIES

from 7:30pm to 8:30pm

for ages fourteen and older / no admission fee

22 May: Apollo 13 “Okay, Houston, we’ve had a problem here.” That chilling statement was transmitted through space from the brave crew to Mission Control. It soon became clear to Commander James Lovell, Command Module Pilot Jack Swigert and Lunar Module Pilot Fred Haise that they had not only “lost the moon” but were also in a very precarious situation. It was the determination, creativity and ingenuity of the crew and NASA personnel that held sway, transforming a potential tragedy into a triumph of intelligence, engineering and quick thinking. HRPO Center Supervisor Tom Northrop’s Apollo anniversary lectures continue with this harrowing and exciting entry!

29 May: Meteor Showers HRPO Program Aide Judah Santiago covers the major nighttime periods for meteor hunting, and provides guidance for perform the activity as leisure or for citizen science.



STEM Expansion

Saturday 23 May from 3:30pm to 7:30pm. For ages twelve to sixteen. \$15/\$18 per kid.

Hour One: Medical Benefits of Space Studies

Hour Two: Compton Gamma Ray Observatory (Data, Model Building)

Hour Three: Electronics Learning Lab (Console Sections/Part Insertions)

Hour Four: Unearth and Tech Connect Games

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.



Plus Night

Saturday 30 May from 7pm to 10pm

for all ages / no admission fee

During Plus nights sky viewing starts a half-hour earlier and extra features are available to the public...

*The well-known marshmallow roast commences at the campfire ring behind the building, lasting at least one hour and ending no later than 9:30pm. (The campfire, like the sky viewing, is weather-dependent.)

*Four to eight of HRPO’s collection of over fifty physical science demonstrations will be on hand to perplex and amaze. Which demos will it be?

*An unaided eye sky tour takes place, showing the public major features of the sky for that month. The tour takes place at 8pm during Standard Time, and at 9pm during Daylight Time.

*Filters are inserted into the viewing mechanisms, to show patrons “hidden” details of the Moon, Mars and Jupiter (when they are available).

*Reveal your age, and be shown any “birth stars” in the sky at that time.



American Radio Relay League Field Day

Saturday 27 June from 2pm to 10pm

No admission fee. For ages eight and older.

Subject to change due to virus outbreak and response.

The Baton Rouge Amateur Radio Club will take part in an exciting nationwide emergency exercise. Temporary stations will be set up at HRPO as BRARC joins similar clubs across the continent in an exciting emergency exercise. Some clubs use strictly battery power and solar power. Some clubs use low power outputs (five watts or less) to make contact with other stations all over North America. Field Day is a twenty-four-hour endurance session of skill and suspense.

The Amateur Radio Service, founded decades ago, is the original “social medium!” Ten of thousands of licensed hams—including high schoolers, college kids, parents and grandparents—communicate day after day from coast to coast.

What can people do in the Amateur Radio Service?

- Talk around the world without the Internet or cell phones.
- Send a message to another country using less electricity than a nightlight.
- Transmit your communication in code—Morse code!
- Speak to astronauts on the International Space Station.

What can adults do in the Amateur Radio Service?

- Earn various awards.
- Have more peace of mind knowing that, unlike the internet, federal law mandates sending identifying information during any communication.
- Increase the chances of their families having contact with the outside world during an emergency, simply by connecting radio equipment to a car battery.
- Collect weather and flight data from a launched balloon.

What can kids do in the Amateur Radio Service?

- Work toward specialized merit badges and patches.
- Steer radio-controlled cars and airplanes, or control robots, using ham-only frequencies.
- Keep a hand-held remote transceiver during camping trips.

Come learn more about amateur (or “ham”) radio at this fantastic annual event. Remember, if you like what you see at Field Day, there will be plenty of friendly “hams” around to tell you exactly what you need to do to obtain your own amateur radio license and start transmitting!

PROUD OF OUR Observatory????

LET OTHERS KNOW IT BY WEARING THE LATEST T-SHIRT.

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: May

by John Nagle

Hydra – The Water Snake

Position: RA 14 46 00, Dec. -25 26 35 °

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

Alphard (Alpha Hyd), from the Arabic “Al Fard al Shujā”, “The Solitary One in the Serpent”, or “Al Fakār al Shugā”, “The Backbone of the Serpent”, also called “Cor Hydrae”, “The Dragon’s Heart”, mag. 1.99, 09 27 35.25 -08 39 31.3, is an orange giant star that has a large barium content. The triple star **29 Hydrae** lies $\frac{1}{2}^\circ$ to the south. Also known as **HD 81797**, **HIP 46390**, **Gould 140**, and **30 Hydrae**.

Tsing Kew (Beta Hyd), with Xi Hyd, is known as “The Green Hill” in China, mag. 4.29, 11 52 54.56 -33 54 29.3. Also known as **HD 103192**, **HIP 57936**, and **Gould 301**.

Dah nab al Shujā (Gamma Hyd), “The Snake’s Tail”, sometimes called “Cauda Hydra”, “Hydra’s Tail”, mag. 2.99, 13 18 55.25 -23 10 17.1, is a yellow giant star with an optical companion. The star has stopped fusing hydrogen, and might possess a dead helium core. As the core shrinks, the heat and pressure will cause the star to fire up and start fusing carbon and oxygen. Also known as **HD 115659**, **HIP 64962**, **Gould 345**, and **46 Hydrae**.

Lisan al Shudjā (Delta Hyd), “The Tongue of the Snake”, mag. 4.14, 08 37 39.41 +05 42 13.7, is a white binary dwarf star. Also known as **HD 73262**, **HIP 42313**, **Gould 36**, and **4 Hydrae**.

Min al Az’al (Epsilon Hyd), “Belonging To the Uninhabited Spot”, also called “Ashlesha”, mag. 3.38, 08 46 46.65 +06 25 08.1, is a five star system. The primary is a yellow-white giant star with a white sub-giant star orbiting so close that it is considered a spectroscopic binary star. A little further away is another binary pair of stars, and a little further than that pair is a dwarf star. Component A-magnitude 3.8; B-magnitude 4.7; C-magnitude 7.8; D-magnitude 12.7. Separation of components A and C is 2.7”. Components A and B orbital period is 15.05 years, with component C having a period of 9.90 days. Also known as **HD 74874**, **HIP 43109**, **Gould 59**, and **11 Hydrae**.

Hydrobius (Zeta Hyd), “The Water Dweller”, mag. 3.11, 08 55 23.68 +05 56 43.9, is an evolved giant star in the class between a giant and a bright giant star. Also known as **HD 76294**, **HIP 43813**, **Gould 77**, and **16 Hydrae**.

Ukdah (Iota Hyd), or “Ping Sing”, “A Tranquil Star”, mag. 3.90, 09 39 51.33 -01 08 33.6. Also known as **HD 83618**, **HIP 47431**, **Gould 170**, and **35 Hydrae**.

Al Sharāsif (Kappa Hyd), “The Ribs”, mag. 5.07, 09 40 18.38 -14 19 58.1. Also known as **HD 83754**, **HIP 47452**, **Gould 173**, and **38 Hydrae**.

Tsing Kew (Xi Hyd), with Beta Hydrae, is known as “The Green Hill” in China, mag. 3.54,

11 33 00.26 -31 51 27.1. Also known as HD 100407, HIP 56343, and **Gould 288**.

Al Minliar al Shugā (Sigma Hyd), “The Snake’s Nose”, or “Minhar al Shija”, “The Nostril of Hydra”, proper name is “Minchir”, mag. 4.45, 08 38 45.45 +03 20 29.3, is an orange giant star. Also known as **HD 73471**, **HIP 42402**, **Gould 42**, and **5 Hydrae**.

Ukdah (Tau¹ Hyd), with Tau² Hydrae, “The Knot”, mag. 4.59, 09 29 08.84 -02 46 08.2. Also known as **HD 81997**, **HIP 46500**, **Gould 152**, and **31 Hydrae**.

Ukdah (Tau² Hyd), with Tau¹ Hydrae, “The Knot”, mag. 4.54, 09 31 58.93 -01 11 04.8. Also known as **HD 82446**, **HIP 46776**, **Gould 152**, and **32 Hydrae**.

Zhang (Upsilon Hyd), mag. 4.11, 09 51 28.68 -14 50 47.6, has a brown dwarf companion. Also known as **HD 85444**, **HIP 48356**, **Gould 178**, and **39 Hydrae**.

Felis (HD 85951), mag. 4.94, 09 54 52.24 -19 00 33.4. Also known as **HIP 48615**, and **Gould 183**.

Ukdah (33 Hydrae), mag. 5.56, 09 34 32.64 -05 54 53.3. Also known as **HD 82870**, **HIP 46982**, **Gould 163**, and **A Hydrae**.

Deep Sky:

M48 (NGC 2548), mag. 5.8, 08 13 44 -05 45 00, 38’ in size, is a galactic star cluster of about 80 stars; detached, strong concentration of stars; moderate range in brightness; very large; magnitude of brightest star is 8.2. Triangular in outline. Messier’s reported position is off by more than 4° in declination. Caroline Herschel corrected the mistake. Also known as **Mel 85**, **Cr 179**, **H6-22**, **OCL 584**, **Lund 439**, **Raab 72**, and **CGCG 0811-056**.

M68 (NGC 4590), mag. 7.3, 12 39 28 -26 44 34, 9’x9’ in size, is a globular cluster of over 100,000 stars (250+ giant stars); low concentration of stars; large, very rich, and very well resolved in a telescope. To find, locate **Beta Corvii**, then go 3° south-southeast to a bright 5.5 magnitude star (binary star **B230**, magnitude 5.5 and 12.0, separation of 1.3”), **ADS 8612**), then go 45’ to the northeast of the star. A *Mira* type variable star, **FL Hydrae**, is 25’ to the northeast of **M68**. Also known as **Ben 51**, **Mel 113**, **EQ 1236-264**, and **CGCG 1236-264**.

M83 (NGC 5236), mag. 7.6, 13 37.1 -29 52, 11.2’x10.2’ in size, is a very bright, large, and face-on galaxy; two main arms; extremely bright nucleus (20” diameter). It is one of the brightest galaxies in the southern sky. It shows strong emission lines, and its spiral arms are separated by narrow dust lanes. An oval core and bright bar is encircled by an interesting spiral arm pattern. To find the galaxy, start at **Gamma Hydrae** and go 6½° south and then ¾° east to a magnitude 5.5 star – 40’ to the northeast of it is **M83**. **NGC 5061** is 3½° south of **Gamma Hydrae** along the line to **M83**. Also known as “The Southern Pinwheel Galaxy”, **Ben 63**, and **Lac 1.6**.

Hydra II, mag. 4.8, 12 21 42.1 -31 59 07, 1.7’ in size, is a dwarf galaxy. Also known as **A 732**.

NGC 3242, mag. 7.8, 10 24 46.2 -18 38 34, 75” in size, is a planetary nebula that is very bright, slightly elongated; has a pale green ring; and looks like a bluish egg. The inner ring resembles the outline of a human eye, with the central star at magnitude 12.3. Located 1.8° south of **Mu Hydrae**. Also known as “The Ghost of Jupiter”, “CBS Eye”, “Jupiter’s Ghost”, “Eye Nebula”, “Diamond Nebula”, **H4-27**, **C 59**, **Ben 45**, **ESO 568-05**, and **PK 261+32.1**.

NGC 3621, mag. 8.9, 11 18.3 -32 48, 3.5’x1.4’ in size, is a quite bright, very large, and elongated galaxy; knotty arms; small, bright, elongated nucleus. Also known as **H1-241**, and **Ben 46**.

NGC 3923, mag. 9.6, 11 51.0 -28 48, 6.0’x4.2’ in size, is a bright, pretty large, and slightly elongated galaxy; small, bright, elongated nucleus. Also known as **H1-299**, and **Ben 49**.

NGC 3585, mag. 9.7, 11 13.3 -26 45, 2.9’x1.6’ in size, is a bright, pretty large, elongated galaxy. Also known as **H2-269**.

NGC 3109, mag. 9.8, 10 03.1 -26 10, 21’x3.7’ in size, is a faint, very large, and extremely elongated edge-on galaxy; a long, spindle-shaped galaxy whose ends appear to be squared off. **NGC 3109** is interacting with the **Antlia Dwarf Elliptical Galaxy** in the **Antlia** constellation.

Deep Sky beyond magnitude 10 that is of some interest

NGC 5694, mag. 10.2, 14 39 36.5 -26 32 18, 4.3’ in size, is a 12 billion year old star cluster. Also

known as **Tombaugh's Globular Cluster, C 66, H2-196, and CGCG 1436-263.**

NGC 5153, mag. 1.8, 13 29 04 -29 43 31, 2.1'x1.4' in size. Also known as **ESO 444-045, ESO 132507-2921.6, AM 1325-292, MCG-5-32-025, and Fly's Wing.**

K1-22, mag. 12.1, 11 26 43.8 -34 22 11, 3' in size. Also known as the "**Southern Owl Nebula**"

Hydra 1, mag. 12.7, 10 36 54 -27 31 00, 168' in size, 157 galaxies, part of the **Hydra-Centaurus Supercluster**. Also known as **AGC 1060, Hydra 1 Cluster, and Hydra Galaxy Cluster.**

PK 303+40.1, mag. 12.7, 12 53.57 -22 52.3, 709" in size. Also known as **Abell 35, Sh2-313, PNG 303.6+40.0**, and the "**Bow Shock Nebula**".

Hydra A, mag. 14.8, 09 18 06 -12 05 45. Also known as **3C218, and MCG-2-24-007.**

French 2, 10 07 -24 55, 39' in size, is 11 stars in the shape of a camel. Also known as "**The Camel**".

AI J1104.6-3157, 11 04 37 -31 57 30, 3.3' in size, 8 stars in a poor but distinctive "**C**" shape. Asterism?

There are 888 deep sky objects in Hydra. The following is a list of the ones I know of:

226 NGC; 72 IC; 51 UGC; 9 UGCA; 53 CGCG; 148 MGC; 159 ESO; 16 PGC; 10 PK; 5 PNG; 6 Bennett; 9 Arp; 4 Abell; 5 HCG; 2 Klemola; 6 AGCS; 4 AGC; 2 A; 2 Mel, 2 Cr; 2 C; 1 Sand; 53 Herschel; 18 VV – 42 objects; 4 Radio Galaxies; 1 Quasar; 2 K1; 4 AI; 1 Ju; 1 MrWe; 1 WGA; 1 Sh2; 1 IRAS; 1 Pardanaud; 1 HE; 1 PKS; 1 [A084]; 1 Lac; 2 Slo; 3 AM; 1 French; 1 Elo; 1 Monti, 1 WHC; 1 WNO; and 4 MAC.

Other Stars:

27 Hydrae, mag. 4.8, 09 20 29.03 -09 33 20.3, is an evolved giant star in a triple star system, and has an unconfirmed planet in orbit with a period of 9.3 years. The secondary star is a binary at magnitude 7, and its companion is at magnitude 11. Also known as **HD 80586, HIP 45811, Gould 124**, and **P Hydrae**.

U Hydrae, mag. 4.89, 10 37 33.25 -13 23 04, is a red, variable carbon star with its magnitude varying from 4.2 to 6.6 over a period of 115 days. Also known as **HD 92055, HIP 52009, and Gould 240.**

HD 122430, mag. 5.47, 14 02 22.8 -27 25 47.1, has one planet in orbit. Also known as **HIP 68581, and Gould 367.**

272 G(ould), mag. 5.79, 11 09 53.38 -32 22 02.8. Also known as **HD 97023, HIP 54561, and HR 4339.**

OY Hydrae, mag. 6.11, 09 59 06.32 -23 57 02.8, is a Be star. Also known as **HD 86612, HIP 48943, and Gould 188.**

HD 96700, mag. 6.50, 11 07 54 -30 10 28, has two planets in orbit. Also known as **HIP 54400, and Gould 269.**

HD 82943, mag. 6.54, 09 34 50.74 -12 07 46.4, has three planets in orbit. Also known as **HIP 47007, and Gould 164.**

HD 90156, mag. 6.95, 10 23 55.27 -29 38 43.9, is a variable star with one planet in orbit. Also known as **HIP 50921.**

V Hydrae, mag. 7.0, 10 51 37.26 -21 15 00, is a carbon star. It is one of the reddest stars in the night sky. Classified as a semi-variable star, its visible magnitude varies from 7.0 to 11.5 over a period of 18 years, with a sub-period of 530 days. Also known as **HIP 53085.**

HD 86264, mag. 7.42, 09 56 57.84 -15 53 42.4, has one planet in orbit. Also known as **HIP 48780.**

HD 86958, mag. 7.46, 10 01 38 -17 19 59, has one planet in orbit. Also known as **HIP 49129.**

HD 72659, mag. 7.48, 08 34 03.19 -04 34 05.6, has one planet in orbit. Also known as **HIP 42030.**

HD 74156, mag. 7.62, 08 42 25.12 +04 34 41.2, has three planets in orbit and one un-confirmed planet in orbit. Also known as **HIP 42723.**

HD 86226, mag. 7.93, 09 56 29.84 -24 05 57.8, has one planet in orbit. Also known as **HIP 48739.**

HD 128356, mag. 8.29, 14 37 05 -25 48 09, has one planet in orbit. Also known as **HIP71481.**

V478 Hydrae, mag. 8.20, 08 22 49.95 +01 51 33.6, has one planet in orbit. Also known as **BD 70573.**

HD 72892, mag. 8.83, 08 34 53.0 -14 27 24, has one planet in orbit. Also known as **HIP 42098.**

WASP-166, mag. 9.36, 09 39 30 -20 58 57, has one transiting planet in orbit.

Gliese 433, mag. 9.79, 11 35 26.95 -32 32 23.9, has one planet in orbit. Also known as **HIP 56528**.

Stars beyond magnitude 10 that are of interest:

There are 11 stars with 1 transiting planet each; one star with three transiting planets; and one star with one planet in orbit.

Hydra also goes through the constellation Crater, using some of its stars. The following is a list of stars that are used by Hydra in Crater: 3,5,6,8,10,18,20,22,23,26,and 29 Crateris.

There are 178 stars that I know of in Hydra. The following is a list of them: 31 Σ ; 2 $O\Sigma$; 5 V; 13 A; 38 β ; 12 I; 23 h; 4 Kui; 7 B; 2 Arg; 3 S; 4 Howe; 2 Hu; 4 Ho; 6 Rst; 2 Hd; 3 Stn; 1 Hn; 1 HW; 1 Cor; 1 Bvd; 2 H III; 1 HV, 1 HN; 1 Δ ; 1 λ ; 2 Sh; 1 Wei; 1 Jc; 1 Sej; and 1 Stone.

Sky Happenings: May, 2020

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



- May 1st -** Dusk: **Venus** blazes in the western twilight skies throughout the month.
- May 4th -** **Mercury** is in superior conjunction at 5 PM CDT.
- May 5th -** Morning: The **Eta Aquarids** peak in the early hours of the morning,
The **Moon** is at perigee (223,478 miles or 359,654 km from **Earth**) at 10:03 PM CDT.
- May 7th -** **Full Moon** occurs at 5:45 AM CDT.
- May 11th -** **Saturn** is stationary at 4 AM CDT,
Asteroid **Pallas** is stationary at 6 AM CDT.
- May 12th -** Dawn: The waning gibbous **Moon**, **Jupiter**, and **Saturn** form a triangle straddling the border
between **Sagittarius** and **Capricornus**,
The **Moon** passes 2° south of **Jupiter** at 5 AM CDT,
The **Moon** passes 3° south of **Saturn** at 1 PM CDT.
- May 13th -** **Venus** is stationary at 5 AM CDT.
- May 13/14** Dawn: The thinning **Moon** leaves the gas giants and approaches **Mars**.
- May 14th -** **Last Quarter Moon** occurs at 9:03 AM CDT,
Jupiter is stationary at 1 PM CDT,
The **Moon** passes 3° south of **Mars** at 9 PM CDT.
- May 15th -** Dawn: The waning crescent **Moon** is about 4° to the lower left of **Mars**,
Dusk: **Venus** presents a crescent that is a good opportunity to test eyesight.
- May 16th -** The **Moon** passes 4° south of **Neptune** at 10 AM CDT.
- May 17th -** **Mercury** passes 7° north of **Aldebaran** at 4 AM CDT.
- May 18th -** The **Moon** is at apogee (252,018 miles or 405,583 km from **Earth**) at 2:45 AM CDT.
- May 20th -** The **Moon** passes 4° south of **Uranus** at 11 AM CDT.
- May 21st -** Dusk: **Venus** and **Mercury** are in conjunction - 1° apart, low above the west-southwest
horizon
- May 22nd -** **Mercury** passes 0.9° south of **Venus** at 3 AM CDT,
New Moon occurs at 12:39 PM CDT.
- May 23rd -** Dusk: A very thin crescent Moon, just 1 day past new, is some 4° to the lower left of **Venus**.
Look for **Mercury** to appear to the upper left of **Venus** as twilight deepens,
The **Moon** passes 4° south of **Venus** at 10 PM CDT.
- May 24th -** The **Moon** passes 3° south of **Mercury** at 6 AM CDT,
The **Moon** passes 0.6° north of asteroid **Vesta** at 10 AM CDT. All of **North America** except
for the **West Coast** will experience an occultation,
Dusk: The waxing **Moon**, **Mercury**, and **Venus** form a line roughly 12° long shortly after
sunset. The viewing window is brief, so be sure to catch the sight before the trio sets.
- May 26th -** Evening: The growing crescent **Moon** is in **Gemini**, about 6° to the left of **Pollux**.
- May 27th -** Asteroid **Juno** is stationary at 9 AM CDT.
- May 28th -** There will be a double shadow transit on **Jupiter** starting at 3:48 AM CDT.
- May 29th -** **First Quarter Moon** occurs at 10:30 PM CDT.

- June 1st** - Dusk: June opens with the waxing gibbous **Moon** in **Virgo**, with **Spica** some 6° to 7° below.
June 4th - Evening: The almost-full **Moon** is about 7° above **Antares** in **Scorpio**.

Planets:

Mercury – **Mercury** passes through superior conjunction on May 4th, and reaches a conjunction with **Venus** on May 21st/22nd. **Mercury** will be at magnitude -0.7, a 6” disk, and will be 69% lit, while **Venus** will be at magnitude -4.4, a disk 53” wide, and only 6% lit. On the 21st, they will be only 1° apart one hour after sunset. **Mercury** will first become visible, after the conjunction with the **Sun** on the 4th, in the evening twilight around May 11th, as a magnitude -1.5 object in the west-northwest, well below **Venus**. Within days of the **Mercury** and **Venus** conjunction, **Venus** will descend out of view. But **Mercury** climbs higher along the ecliptic. On the 31st, in the west-northwest, the planet will hover 8° high an hour after the **Sun** goes down, shining at magnitude 0.1.

Venus – **Venus** begins May with a sunset altitude of about 23° above the western horizon, and sets almost 3½ hours after the **Sun**. But by the month’s end the interval dwindles to less than ½ hour. It will present a 24% lit crescent disk spanning 39” when viewed with a telescope. As May starts, the magnitude 4.7 planet is situated a few degrees from the second magnitude star **Beta Taurii**, *El Nath*. The sunset altitude decreases to 23° on the 15th to only 3° by the 31st. Its brightness will drop from magnitude -4.6 to -4.2 during the month. Its disk, by the 16th, has grown to 50” wide, but has a slender 10% lit crescent. On the 22nd, **Venus** and **Mercury** will be closest in the early morning. The best time for U.S. observers to target the pair will be on the evening of the 21st, when they will stand slightly more than 1° apart. As the month ends, **Venus** will continue to descend deeper into twilights and its altitude falls as it nears its June inferior conjunction.

Mars – **Mars** rises a little before 3 AM local daylight time (LDT) as May opens, and about an hour sooner as the month closes. The planet will brighten from magnitude 0.4 to 0.0 and its disk will grow from 7.6” to 9.2” in diameter. The planet shines about 1° north-northwest of magnitude 3.6 **Gamma Capricorni** (*Nashira*) on May 1st, and about 1° north of magnitude 2.8 **Delta Capricorni** (*Algedi*) on the 4th. On the 9th, the planet will glide from **Capricornus** into **Aquarius** at magnitude 0.4. The best viewing of **Mars** is in the hour before dawn during May. On the 1st, it stands 15° above the southeast horizon by 4:45 AM LDT, and climbs to 26° high at the same time on the 31st. On May 11th/12th, the planet will be less than a moon’s width from **Iota Aquarii**. At month’s end, the planet will be at magnitude 0.0, and will be 2° south-southeast of **Lambda Aquarii**.

Jupiter – **Jupiter** rises close to 2 AM LDT on May 1st, and by the 31st, it is up by midnight LDT. The planet rises above the southeast horizon in **Sagittarius**, with **Saturn** rising 20 minutes later in **Capricornus**. **Jupiter** begins the month at magnitude -2.3, and brightens to -2.6 by May 31st. The planet is stationary on May 14th. On the 18th, **Jupiter** and **Saturn** are 4.7° apart, with **Jupiter** being west-southwest of **Saturn**. This is called a “*quasi-conjunction*” (an event in which two objects don’t share the same right ascension or ecliptic longitude, yet reach a minimum separation of 5° or less from each other). The two planets will remain less than 5° apart all month. **Jupiter** is at its highest this month, with its apparent equatorial diameter growing from about 41” to 45”. Due to the planet’s southerly declination, it remains at a relatively low altitude for the rest of the year, reaching its highest elevation of about 30° above the southern horizon during morning twilight, when it is located in eastern **Sagittarius**. There are three double transits on **Jupiter** in May. On the 13th, at 10:23 CDT, **Ganymede** starts its transit of **Jupiter**, and at 12:59 AM CDT on the 14th, **Europa** starts its transit. **Ganymede** exits its transit at 1:43 AM CDT on the 14th, with **Europa** exiting its transit at 3:45 AM CDT. On the 21st, **Ganymede** starts transit at 2:03 AM CDT, with **Europa** starting transit at 3:23 AM CDT. **Ganymede** ends transit at 5:23 AM CDT, and **Europa** exits transit at 6:09 AM CDT. On the 28th, there is a double shadow and double moon transit of **Jupiter**. **Ganymede**’s shadow starts transit at 1:36 AM CDT, and **Europa**’s shadow starts transit at 3:48 AM CDT. At 4:50 AM CDT, **Ganymede**’s shadow exits transit. At 5:38 AM CDT, **Ganymede** starts transit, with **Europa** starting transit at 5:45 AM CDT. At 6:37 AM CDT, **Europa**’s shadow exits transit. At 8:31 AM CDT, **Europa** exits transit, while **Ganymede** exits transit at 8:58 AM CDT.

Saturn – **Saturn** will sit just 5° east of **Jupiter** every evening in May. **Saturn**’s disk spans 18”, and the rings stretch to 40” wide by the end of May, with the minor axis of the rings just 14” – the north pole of the

planet will arc above the far ring's edge. Saturn is stationary on the 11th. The planet will rise around 12:30 AM CDT as May begins, and around 10:30 CDT as the month ends. On the 18th, **Jupiter** and **Saturn** are just 4.7° apart, with **Jupiter** west-southwest of **Saturn**. **Titan**, **Saturn**'s largest and brightest moon, orbits the planet every 16 days. On the 5th and 21st, it will stand due south of the planet, and due north on the 13th and 29th. Titan is at magnitude 8.6, while the moons **Tethys**, **Dione**, and **Rhea** are between magnitudes 10 and 11, and they orbit the planet closer with shorter periods. The moon **Iapetus** shifts magnitude from 10 to 12 due to its bright and dark hemispheres. It will reach the middle of its range on the 11th, when it is at inferior conjunction (45" due south of the planet). The moon is brightest at western elongations, like the one it reaches on the 31st, when it will shine at magnitude 10.5 and stand about 9" due west of the planet.

Uranus – **Uranus** rises with the onset of twilight, but remains lost in the **Sun**'s glare for most of May, and only emerging at dawn in the final week of the month.

Neptune – **Neptune** rises a little before the start of morning astronomical twilight. The planet returns to the night sky by late May. On the 31st, it sits 8.6° east-northeast of **Mars**, and 3° east of the 4th magnitude star **Phi Aquarii**. The planet, at magnitude 7.9, is, an hour before morning twilight, just 15° high, and its low altitude makes it more difficult to spot later in the year.

Pluto – **Pluto** sits just 2.1° west of **Jupiter** throughout May, but at magnitude 14.7, you will need a large telescope and ideal viewing conditions to spot it without photographic equipment.

Moon – The **Moon** is a waxing gibbous a few degrees above **Regulus** at nightfall on May 1st. The waning gibbous **Moon** is a few degrees below Jupiter at dawn on the 12th. The last quarter **Moon** is several degrees to the right of **Mars** on the 14th. About 30 minutes after sunset on the 23rd, a very thin lunar crescent is less than 5° to the lower left of **Venus**, with **Mercury** a similar distance to the upper left of **Venus**.

Favorable Librations: **Wilson Crater** on May 5th; **Haworth Crater** on the 6th; **Hale Crater** on the 7th; and **Lyot Crater** on the 8th.

Greatest North declination on the 26th (+24.0°)

Greatest South declination on the 11th (-24.0°)

Libration in longitude – East limb most exposed on the 12th (+6.9°)

West limb most exposed on the 27th (-5.9°)

Libration in latitude – North limb most exposed on the 18th (+6.7°)

South limb most exposed on the 4th (-6.6°)

Asteroids – Asteroid **23 Thalia** and **40 Harmonia**, both with a diameter of about 67 miles, will take a lot more care and patience than usual to identify them, as they stand in front of many background stars, glowing at 10th magnitude. During the month, both asteroids are never closer than 2° in **Virgo**. According to the **RASC Observer's Manual, 2020 USA Edition**, **40 Harmonia**'s position is as follows: On May 1st – 14 05.92 -06 02.4, at magnitude 9.9. **Harmonia**'s position, *by my estimates*, are as follows: On May 1st – about 3.2° west of **Iota Virginis**; on the 6th – about 5° west and a little north of **Iota Virginis**; on the 11th – about a little less than 5° west and a little north of **Iota Virginis**, or about 4.8° due south of **90 Virginis**; on the 16th – just under 6° west and a little north of **Iota Virginis**, or about 3.5° south and a little west of **90 Virginis**; on the 21st – about 4° south-southwest of **90 Virginis**; on the 26th – about 4.5° south-southwest of **90 Virginis**; and on the 31st – about 4.7° southwest of **90 Virginis**.

Asteroid **23 Thalia**'s positions, *by my estimates*, are as follows: On May 1st – about 2.6° southwest of **Upsilon Virginis**, or just over 2° north-northwest of **Iota Virginis**; on the 6th – about 3¹/₃° southeast of **Upsilon Virginis**, or just under 3° northwest of **Iota Virginis**; on the 11th – about 3¹/₃° southeast of **90 Virginis**, or 3.7° northwest of **Iota Virginis**; on the 16th – about 2.8° south-southeast of **90 Virginis**; on the 21st – just under 3° south and a touch east of **90 Virginis**; on the 26th – about 3.2° south and a touch west of **90 Virginis**; and on the 31st – about 4¹/₂° southwest of **90 Virginis**.

Asteroid **7 Iris** – according to the **RASC Observer's Manual, 2020 USA Edition**, **Iris**'s positions are as follows: On May 21st – 18 58.45 -21 29.4, at magnitude 9.9; and on the 31st – 18 53.58 -21 14.7, at magnitude 9.6.

Asteroid **2 Pallas**, according to **RASC Observer's Manual, 2020 USA Edition**, **Pallas**, on May 21st, will be

located at 19 37.10 +19 38.6, at magnitude 9.9.

Asteroid **1 Ceres**, according to the *RASC Observer's Manual, 2020 USA Edition*, will be at the following locations: On May 1st – 22 27.06 -18 13.3, at magnitude 9.2; on the 11th – 22 38.22 -17 43.9, at magnitude 9.1; on the 21st – 22 48.28 -17 11.6, at magnitude 9.1; and on the 31st – 22 57.07 -17 11.6, at magnitude 9.0.

Comets – Comet **PANSTARRS (C/2017 T2)** and Comet **C/2019 Y4 (Atlas)**, were both promising naked eye comets which have now been lost – **Atlas** has broken into over 2 dozen pieces. But there is a new promising naked eye comet. Comet **C/2020 F8 (SWAN)** – so far it has only been visible from the **Southern Hemisphere** – pictures from **Australia** and **Tasmania** show it at magnitude 5.5. The **Northern Hemisphere** should be able to see it soon.

Meteor Showers – The main meteor shower in May is the **Eta Aquarids**, one of the two showers associated with **Haley's Comet** (the other shower is the **Orionids** in October). The **Aquarids** have a maximum observable rate of about 10 meteors per hour under perfectly dark skies. A bright **Moon** (a waxing gibbous) will be present during the peak on May 5th, so most urban locations will be lucky to spot 5 meteors per hour. The first few days of May after the **Moon** sets (at 3 AM LDT on May 2nd) is a good time to catch the few early shower members.

Minor Showers in May:

The **Eta Lyrids**, May 6th -13th, peaks on the 10th, zenith hourly rate (zhr) of 3;

The **Tau Herculids**, May 19th – June 14th, peaks on June 2nd, a variable zhr.

Weak Showers in May:

The **Theta² Sagittariids**, May 10th – 15th, peaks on the 13th, zhr of less than 2;

The **Daytime Arietids**, May 22nd – June 24th, peaks on June 7th, zhr less than 2;

The **June Mu Cassiopeiids**, May 18 – June 15th, peaks on June 15th, zhr less than 2.

When to View the Planets:

Evening Sky

Mercury (northwest)

Venus (northwest)

Midnight

Morning Sky

Mars (southeast)

Jupiter (south)

Saturn (south)

Uranus (east)

Neptune (east)

DARK SKY VIEWING - PRIMARY ON MAY 23RD, SECONDARY ON MAY 30TH



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Mythology

Hydra – The Water Snake

Hydra is the largest of the 88 constellations, winding a quarter of the way around the sky. Its head is south of the constellation of Cancer the Crab, while the tip of its tail lies between Libra the Scales and Centaurus the Centaur.

The Water Snake features two legends. First, and most familiar, the Hydra was a creature that Heracles fought and killed as the second of his famous labors. The Hydra was a multi-headed creature; the offspring of the monster Typhon and the half-woman, half serpent called Echidna. Hydra was thus the brother of the dragon that guarded the golden apples, commemorated in the constellation Draco, the Dragon. Hydra reputedly had nine heads, the middle one of which was immortal. Hydra lived in a swamp near the town of Lerna, from which it sallied forth over the surrounding plain, eating cattle and ravaging the countryside. Its breath and even the smell of its tracks were said to be so poisonous that anyone who breathed them died in agony.

Heracles rode up to the Hydra's lair in his chariot and fired flaming arrows into the swamp to force the creature into the open, where he grappled with it. The Hydra wrapped itself around one of his legs; Heracles smashed at its heads with his club, but no sooner had one head been destroyed than two grew in its place. To add to Heracles worries, a huge crab scuttled out of the swamp (sent by Hera) and attacked his other foot, but Heracles stamped on the crab and crushed it. The crab is commemorated in the constellation Cancer the Crab (placed in the sky by Hera). Heracles called for help to his charioteer Iolaus, who burned the stump of each head as soon as it was struck off to prevent others from growing in its place. Finally, Heracles cut off the immortal head of the Hydra and buried it under a heavy rock by the roadside. Heracles slit open the body of the Hydra and dipped his arrows in its poisonous gall.

A second legend associates the water-snake with the constellation of Corvus the Crow and Crater the Cup that lies on its back. In the story, the crow was sent by Apollo to fetch water in the bowl, but the crow loitered to eat figs from a tree. When the crow eventually returned to Apollo, it blamed the water-snake for blocking the stream. But Apollo knew that the crow was lying, and punished him by placing him in the sky, where the water-snake eternally prevents him from drinking out of the bowl.

