

Night Visions

April 2022



Newsletter of the Baton Rouge Astronomical Society

Illustration: SpaceX Crew Dragon spacecraft approaches the International Space Station for docking.. Credits: NASA See Page 10 for April launch details..

Monthly Meeting April 11th at 7:00 PM, in person

You may also join this meeting via meet.jit.si/BRASMeet

(Monthly meetings are held on 2nd Mondays of the month, at Highland Road Park Observatory)

PRESENTATION: The Texas Star Party, by John Nagle

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OBSERVING NOTES – Pyxis Nautica – The Mariner's Compass

www.braastro.org

**Like this newsletter? See PAST ISSUES online back to 2009
Baton Rouge Astronomical Society Facebook Page
BRAS YouTube Channel – Monthly Speakers via Jitsi**

President's Message

April already! Spring is here – hummingbirds have arrived, grass is growing, trees are budding new leaves, flowers are blooming, – and astronomy is also blooming with outreaches. The **IAD** (International Astronomy Day) is coming up on May 7th. BRAS will have a table to sell their used equipment now stored in the BRAS closet at HRPO. There is a sale book with prices listed there, too, so check it out and prepare to buy something.

Hubble has imaged the **furthest known star (nicknamed “Earendel”** – from Tolkein). See article Page 10. It was discovered through a gravitational lens. Once operational after all alignment and testing, the James Webb Telescope will further investigate this star. The star is 12.9 billion years old.

There will be a **“State of HRPO”** meeting next week, with representatives of all 3 partners (LSU, BRAS, BREC) in attendance. Our long outstanding items and concerns will be discussed.

Joel Tews has volunteered to be the BRAS Vice-President. Thank you, Joel! While he gets his astro-legs, I'll be doing the April program.

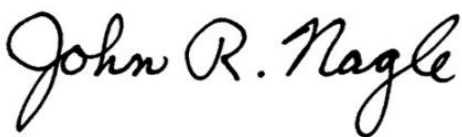
The **BRAS By-Laws** need to be amended to define what constitutes a **“quorum”** at committee and business meetings. As mentioned at the March general meeting, a quorum of 3 members is the proposal. An electronic notice has been sent out to every member as the by-laws require. There will be a vote on the amendment at the April general meeting – please attend and vote!

The **“Stance Against Daylight Time”** page on the BRAS website has been updated.

I have, in BRAS's name, joined the ICCGBR (**Inter-Civic Council of Greater Baton Rouge**). It is “31”, a civic and non-profit organization that volunteer to help each other when needed and gives the Golden Deeds Award which is co-sponsored by the Advocate – the award honors an individual who exemplifies outstanding philanthropy through volunteer service within a 9-parish area.

Finally, **ALCon** plans, and preparations are proceeding. If you want to help/volunteer, contact Steve Tilley.

Clear Skies
John Nagle, 2022 President



*P.S. Michele is on the look-out for more **Astro-Photos**. After all the time she spent in 2020 creating a template for certain of you wanting to show off your work (you know who you are), nobody has been sending them in. Wait!!! Rick Rogers finally came through with a doozie this month! (see page 8)*

Upcoming BRAS Meetings:

Monthly Member Meeting – 7 pm Monday, April 11 at the Observatory, in person and via Jitsi

Light Pollution: 6 pm Wednesday, April 27. (In person only, Open to the public), followed by . . .

Monthly Business Meeting: 7 pm Wednesday, April 27 (Members Only)

MOON (Members Only Observing Night) (Quarterly) TBA

ALCon 2023 (“Astronomical Gumbo”) Committee Meeting TBA



Monthly Meeting Minutes – March 14th, 2022, 7 p.m.

Welcome by the president, John Nagle.

- John introduced Merrill Hess as the speaker for the evening. The title of Merrill's lecture was "Pleiades – Jewels of the Winter Sky". This was a general information talk about the open cluster (M45) in Taurus that's roughly 440 ly away.
- John announced that he had joined ICCGBR on BRAS' behalf (Steven's dad is also a member). This group meets the second Tuesday of every month at Hunan's on South Sherwood Forest. Because they are a service organization, it is possible these people might be able to help with ALCON 2023 if we need assistance. John also spoke on February 17th at the Cortana Kiwanis breakfast.
- The Board of Supervisors had a meeting out at the Observatory; BRAS was represented by Merrill, Scott C., and John N.
- The BRAS computer at the Observatory is having issues. We are looking again at various solutions to fix or replace this machine.
- We recently had questions about quorum sizes for BRAS meetings. We are looking to change the bylaws on this so that the minimum for most, if not all, meetings would be 3 members. This is being researched and will be voted on by the members within the next month or so.
- Ben discussed Rockin' at the Swamp that was held on the 11th. Other outreach events coming up are Makers Market on the 26th, an event on April 8th at Port Hudson that Chris K. is working, Zippity Zoo Fest on April 3rd, Oak Grove on April 6th, Perkins Rowe and the Makers Market in April as well as a big Girl Scout event at Southeastern on April 23rd. International Astronomy Day is coming up at the Observatory on May 7th. Ben also announced NSN toolkit training at the Observatory on Sunday, March 20th, from 1 to 3pm. He also mentioned that name tags are coming soon to those that ordered them (\$5 collect on delivery).
- Steven announced that the ALCON 2023 agreement should be signed in the next couple of months. He's looking for sponsorship help as well as committee help.
- Chris talked about his meetings with Daryl Hughes as well as the upcoming events of Nano Days, International Astronomy Day, and ARRL Field Day. The rules are changing with the ARRL Field Day raffle; this may be cancelled if we can no longer meet the criteria for this part of that event.
- New guests were introduced and pie was served for Pi Day.

Submitted by Roz Readinger, Secretary

2022 Officers:

President: John Nagle

president@brastro.org

VP: Joel Tews

vice-president@brastro.org

Secretary: Roz Readinger

secretary@brastro.org

Treasurer: Trey Anding

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BRAS Liaison for BREC:

Chris Kersey

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Frederick Barnett



Business Meeting Minutes –March 30th, 2022, 7 p.m.

(meeting is the last Wednesday of the month, in person, at HRPO)

There was no quorum present. Items discussed:

1. BRAS Computer – The Bras Computer needs to be replaced. Ben and Trey working on it.
2. Outreach – Volunteer Badges – Ben had sent out an e-mail to those interested, magnetic vehicle signs – Chris K to get several estimates.
3. HRPO – There will be a “State of HRPO” meeting in early April with all of the partners of HRPO to discuss any and all long standing concerns.
4. Training – Ben held a training session on the NSN kit “Space Rocks” at HRPO. “New Member Kit(s)” being made up to give to new BRAS members.
5. Library Telescopes – The main library at Goodwood has given totals of check-outs for the last 10 years – it averages to 11.7 times a year. Still have not heard from WBRPL.
6. The BRAS sale table and the sale book pricing are being handled by Scott C.
7. BRAS Stationary is being worked on.
8. BRAS Star Party – Don W. is working on it.
9. Investigating a proposal to send the January “Night Visions” to all former BRAS members with an invitation to attend a meeting and possibly re-join BRAS.

New Business

1. Update to the “Stance Against Daylight Time” page on the BRAS website being done.
2. By-Law amendment for a definition of what constitutes a “quorum” for committees and business meetings. Notice sent to all members and a vote will take place at the April general meeting. Please attend and vote!

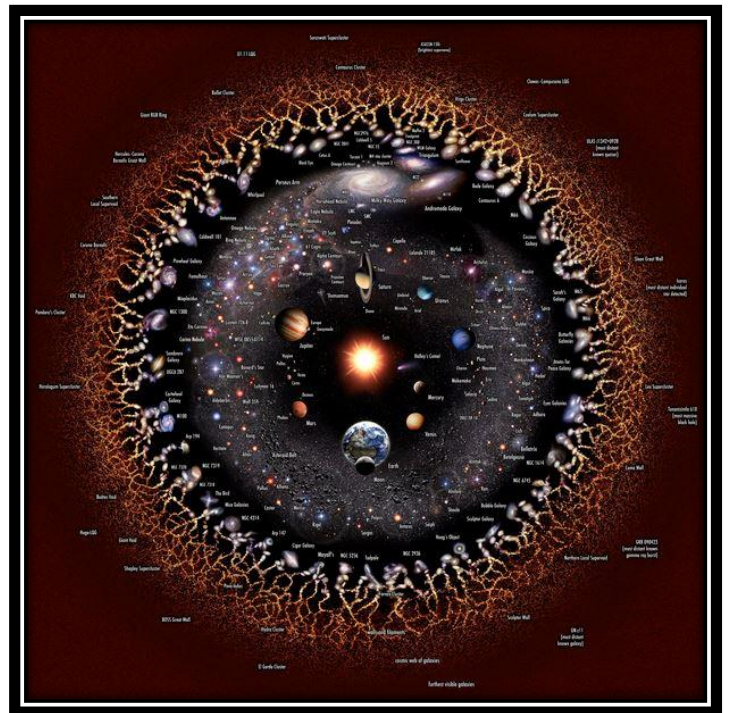
Submitted by John Nagle for Roz Readinger

Extended universe - a logarithmic illustration

(submitted by Craig Brenden)

Logarithmic scale conception of the observable universe with the Solar System at the center, inner and outer planets, Kuiper belt objects, Alpha Centauri, Perseus Arm, Milky Way galaxy, Andromeda galaxy, nearby galaxies, Cosmic Web, Cosmic microwave radiation and Big Bang's invisible plasma on the edge. Distance from Earth increases exponentially from the center to the edge. Celestial bodies are shown enlarged to appreciate their shapes.

[File:Extended universe logarithmic illustration \(English annotated\).png - Wikimedia Commons](#) Pablo Carlos Budassi (Author)





Outreach Report

Hi Everyone,

Well, we are in full swing now! At the time I'm writing this (and since last month), we had a very successful and fun outing to **Rockin' At The Swamp** and another good time at the **Mid City Makers Market**. By the time you read this, we'll probably have finished **Zippity Zoo Fest**, as well!

We couldn't do ANY of this without the help of our volunteering members so a well-deserved "Thank You!" is in order for **Roz, Chris R., Annette, John, Craig, Coy, Chris K, Scott and Ben**. I'm hoping that by next month's letter, we'll be seeing some more names in there, too!

We also had a good **NSN toolkit session** in March. Only a couple of members showed up, but we were able to do an inventory of our kits and start to get a focus on what we want to use at various events. We will be doing one again soon and we will focus on the "**Our Magnetic Sun**" toolkit. With all of the daytime events we do (and always trying to add some solar observing), we thought this would be a great kit to get into the rotation.

Now, short and to the point, we still have a busy month ahead of us and could use more help. Please take a look at the list below and get back to me ASAP if you would like to help out.

Upcoming Events: * newly added info regarding the event

Wednesday, April 6th

5:30-8:00pm (setup begins at 4:30pm)

Oak Grove Primary STEAM Night Demos, info (all indoors so no observing)

* We have enough volunteers, but more are always welcome

Friday April 8th

9:30am-11:30am

Port Hudson State Historic Site

School Days

2 or more volunteers needed

Demos, info, solar observing possible

* We have 2 volunteers, but this could be a large group so 1 or 2 more would be nice!

Saturday, April 23rd

9:30am-2pm

Southeastern Louisiana University Campus

BIG Event (Girl Scouts)

Several volunteers needed for possible shifts

Demos, info, solar observing

* This is a BIG event (as it says) and we need help. Several of our regulars are not available.



Chris R. showing off the Sun on this beautiful day

Friday April 29th * Pending *

3:30pm-6:30pm
St. Luke Episcopal School Baton Rouge School Fair
Demos, info, solar observing

Friday, May 6th

9am-11:30am
Port Hudson State Historic Site School Days
2 or more volunteers needed
Demos, info, solar observing possible

Saturday, May 7th

3pm-11pm
International Astronomy Day at the HRPO
Several people needed to staff proposed BRAS tables

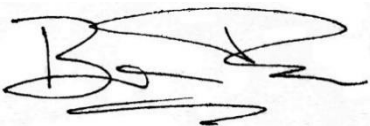
Saturday, May 7th

Evening (30 minutes to 1 hour duration)
Camp Marydale in St. Francisville
1 or more volunteers needed
Talk to Girl Scouts about Science and Astronomy
Telescope viewing. Age range of campers 2nd and 3rd grade (about 15 girls)
* We have enough volunteers for this small event, but we won't turn you away if you want to help!

Along with those events, we will also still be having our **Sidewalk Astronomy at Perkins Rowe (Tuesday, April 12th)** and the **Mid City Makers Market (April 16th)**. Just a note, the Makers Market is early in May. It will be FRIDAY, May 6th from 6pm-10pm. It's the annual Hot Art Cool Nights event in the area.

Again, please let me know as soon as you can if you would like to help out with any of these events. No experience necessary! We won't send you out there alone so someone will be there that can show you how you can help out. Besides which, IT'S FUN!

Clear Skies, Ben Toman



Scott and Annette ready to ROCK!



John all bundled up against the cold morning air as he shows the Sun through his scope. Scott and Annette behind him at the demo table.



LPC (Light Pollution Committee) Report

This committee meets at 6:00, same day as the 7:00 BRAS Business Meeting
Meetings are on the last Wednesday of the month.

Everyone is welcome to join in.

There was no quorum present. Topics discussed were:

1. Update for the signers of the Light Pollution Petition.
2. SQM readings – where readings will be taken, and where they will be recorded (in a notebook at the “Save the Milky Way” display at HRPO).
3. Discussed the 7-Year Plan
4. The University lakes Project – enough money has been allocated to do the improvements to the walkways and paths around the lakes.

New Business:

1. We are working on a template for a survey of all luminaires at all BREC facilities.
2. We are also working on a form letter stating BRAS’s position on Light Pollution to be sent to any new construction in the Greater Baton Rouge Area.

Globe At Night

The target for the Globe at Night program is Leo from April 22nd through May 1st.

If you would like to participate in this citizen science program, you can find instructions at

<https://www.globeatnight.org>

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

BRAS subreddit and a Discord server.

Our subreddit has been set up for us to reach out to the public. Please join us on there. <https://www.reddit.com/r/BRAstro/>

Our Discord server is for Members only, and requires the download of a free app. It's a fun place for us to hang out. To join the discord, email safey2007@gmail.com with the subject **BRAS Discord**.

To add a Flair next to your username, PM Amy Northrop.

.For Discord help, access **techsupport-faq**,

or message Amy orJustin: <https://discord.gg/6N8r8DDj>

It also has voice channels so that you can speak to people through Discord.

The best part about both of these is that you can access them on your phone with the free apps. Hope to see you there. ~ Amy Northrop

2023 Astronomical League Convention in Baton Rouge!


BRAS has the honor of being the first to host an AL-CON in Louisiana since AL's inception in 1939.

Our theme will be “Astronomical Gumbo”



This theme represents the blend of diverse subfields within the vast field of astronomy. People from all over the globe will be in attendance for the biggest yearly gathering of amateur astronomers in the nation. This convention will offer a large range of benefits not only to BRAS, but to HRPO, other nearby astronomy facilities, and the tourism industry of Baton Rouge. For example, the publicity will bring in many new club members and allow us to reach a much larger audience to share our love of astronomy with. There's not a better time than now to get involved, and lots of help will be necessary to make this event one to remember. Volunteers from all areas of any skill level are welcome to join any of the subcommittees: Scheduling, Finance, Publicity/Communications/Photography, Venue & Housing, Transportation, and Reports.

Next Full committee meeting: TBA

If you would like to attend this meeting, and/or help by working on a subcommittee please send an email to Steven Tilley at steveareno225@gmail.com.



ALCON 2022
July 28 – 30
EMBASSY SUITES HOTEL
1000 Woodward Pl. NE
Albuquerque, New Mexico 87102
<https://alcon2022.astroleague.org/>
(Website available by January 14, 2022)



Hosted by:
The Albuquerque Astronomical Society
www.TAAS.org

**REGISTRATION FOR
THE 2022
CONVENTION IN
ALBUQUERQUE
BEGAN ON
MARCH 15, 2022**

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SPACE TODAY.**

[ALCON 2022 Registration | Astronomical League Convention](#)

[Mail-In Registration Form 2022-02-23 \(alcon2022.org\)](#)

ASTROPHOTOS BY BRAS MEMBERS

Richard Rogers Photos



This is the “I can’t get no respect” nebula – M78. It is tough to get any attention when the Great Orion Nebula, Horsehead Nebula, Flame Nebula, etc are in the immediate neighborhood. M78 is an enormous reflection nebula about a degree northwest of Alnitak [left most “belt” star in Orion. The light from M78 left home at about the time of the final collapse of the western Roman Empire, 1600 years ago.

This image was taken at Clinton, LA Jan 26, 2022 with an 8 inch GSO F4 astrograph attached to a Nikon D300S DSLR. 100, 90 second exposures were assembled by Deep Sky Stacker and the final image processed by StarTools 1.3 and “cleaned up” with PaintNet. The scope was guided with a Celestron Nexstar attached to a Celestron 80 mm guide scope. The whole optical rig was steered by a Meade LX85 GoTo equatorial mount. Rick

Axiom Mission 1 (Ax-1) — the first private mission to the ISS, will take an all-private crew of four aboard a SpaceX Falcon 9 rocket.

(from Wikipedia) It will launch atop a [Falcon 9 Block 5](#) launch vehicle from [Kennedy Space Center's Launch Complex 39A](#) (LC-39A), a NASA-owned launch pad leased to SpaceX for Falcon 9 launches. The mission will be flown aboard [Crew Dragon Endeavour](#), which previously supported the [Crew Dragon Demo-2](#) and [SpaceX Crew-2](#) missions.^[23] From there the spacecraft will spend two days in transit to the station and dock with *Harmony*, where they will then spend eight days aboard the International Space Station (ISS). Following their time on the ISS, the spacecraft will undock and return to [Earth](#) via a [splashdown](#) in the [Atlantic Ocean](#).

When? Rocket Launch is postponed from April 1 to April 6th (at the earliest)

Follow the mission here LIVE: [Axiom Space — World's First Commercial Space Station](#)

[Rocket Launch: SpaceX Falcon 9 Axiom-1 \(kennedyspacecenter.com\)](#)



In this illustration, a **SpaceX Crew Dragon spacecraft** approaches the International Space Station for docking. NASA is partnering with Boeing and SpaceX to build a new generation of human-rated spacecraft capable of taking astronauts to the station and expanding research opportunities in orbit. SpaceX's upcoming Demo-1 flight test is part of NASA's Commercial Crew Transportation Capability contract with the goal of returning human spaceflight launch capabilities to the United States.

Private companies will now have access to the space station. Who wants it? What do they plan to do there? Read about it: [Low-Earth Orbit Economy | NASA](#)

Light from Earendel has travelled for an estimated 12.9bn years to reach Earth – a huge leap from the previous most distant star, [which dates to nine billion years](#).

The most distant star ever seen has been captured by the [Hubble space telescope](#) in images that appear to give a remarkable glimpse into the ancient universe.



The observations were possible thanks to a rare cosmic alignment, meaning that Earendel may be the only individual star from this epoch that we will ever see. Read more here: [Distant star found by Hubble telescope may be earliest we will ever see | Astronomy | The Guardian](#)



Messages from HRPO

Highland Road Park Observatory



FRIDAY NIGHT LECTURE SERIES

All start at 7:30pm. All are for ages fourteen and older.

1 April: “Titanic—110 Years Later” The tale of *Titanic’s* [ill-fated voyage](#) and her unfortunate passengers and crew have been recounted numerous times over the past century. BREC Education Program Specialist Amy Northrop reveals her notes and thoughts of that April night in the north Atlantic.

8 April: “Wonders of the Spring Sky” The temperature is mild as April’s constellations settle high overhead early in the night. For her second consecutive talk, Amy Northrop takes the audience on a fascinating tour of Baton Rouge’s spring season. She highlights [the celestial gems](#) that will sparkle throughout the next three months—gems that visitors will be able to see live if they continue to visit HRPO!

15 April: “Apollo 16 Fiftieth Anniversary” John Young and Charlie Duke headed down to Descartes while Ken Mattingley [kept watch in orbit](#). Former BREC Center Supervisor Tom Northrop tells the story.

22 April: “The Gallaudet Eleven” They couldn’t hear, but these [eleven men](#) helped NASA understand the probable performance of the human body in low-Earth orbit. We owe them a lot!



EVENING SKY VIEWING

No admission fee. For all ages.

Friday (1, 8, 15 and 22 April) from 8:30pm to 10pm

Saturdays (9, 16, 23 and 30 April) from 7:30pm to 10pm

HRPO houses a 50-cm reflector, a 40-cm reflector and several smaller telescopes to bring the majesty of the night sky to the public. Trained operators, sharing duties via a rotating roster, work throughout the year in shifts. Each operator has a pre-planned list of objects to highlight. However, requests will be taken if there is time and if all present have viewed the previous target.



SCIENCE ACADEMY

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

9 April = “Spring Day” Four times per year, we celebrate the beginning of the new season! For spring, Cadets will study the constellations Cancer and Hydra, and build on the circuit board!

16 April = “Weather Forecasting” Cadets have experience weather their whole lives. Now they’ll experience the basics of how to give a good prediction of what will have tomorrow and the next day!

23 April = “Clouds” They bring storm and herald winds, but they also add nuance to a view of the Moon and assist in creating atmospheric phenomena. Cadets know—clouds are our friends!



PLUS NIGHT: “Nano Expansion”

Saturday 2 April from 7pm to 10pm.
For all ages. No admission fee. Binocular recommended.

During Plus Nights and extra features are available to the public...

*The well-known marshmallow roast takes place at the campfire ring (weather-dependng).

*Six 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.

*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.



SPRING SPACE EXPLORATION CAMP

Tuesday 12 April and Wednesday 13 April (8am to 5pm daily)
Mission Theme: Future of Spaceflight/Rockets: Gnome and Crossfire

Activity: Interstellar Spacecraft Design

All materials are supplied; Explorers will need a sack lunch and drink that does not require refrigeration. Explorers will also need to bring a hat and sunscreen. Parents may register in person at the HRPO or online at [Webtrac](#) (the activity number is 531180).

*for Explorers ages 9 to 13 / Limit twelve campers.

*\$55 per in-parish child / *\$66 per out-of-parish child (cost covers both days)



MERCURIAN ELONGATION

Friday 29 April from 5pm to 6:30pm / 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. Come join us at the Burbank Soccer Complex! The planet will appear as a “half-Mercury”.



STEM EXPANSION: “Metallurgy”

Saturday 30 April from 3:30pm to 7:30pm

For ages twelve to sixteen. / \$15 each per in-parish registrant; \$18 each per out-of-parish registrant. Advanced registration via [WebTrac](#) required [activity #531993].

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. There are also giveaways and door prizes.



INTERNATIONAL ASTRONOMY DAY

Saturday 7 May from 3pm to 11pm / No admission fee. For all ages.

It’s back—the greatest IAD event in the region returns. The hugely popular Adventure Quest game, delicious food and drink, and a passport to the stars. Visits from the Baton Rouge Amateur Radio Club, the Baton Rouge Zoo, the BREC Art Program, the Baton Rouge Gem and Mineral Society and more. Mark your calendar and don’t miss it.





OBSERVING NOTES **APRIL**

Pyxis Nautica – The Mariner’s Compass

Position: RA 9, Dec. -30°

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 update the constellations with new and expanded material. This is the last of the updating of the Observing Notes. In the future, only new information will be updated, but the Sky Happenings calendar and associated information are new each month.

Named Stars

There are no named stars in Pyxis Nautica.

Deep Sky:

NGC 2818, mag. 8.2, 09 16 0.4 -36 37 36.5, 9' in size, 298 stars; detached, weak concentration of stars; moderate range in brightness; pretty bright, pretty large, round; magnitude of brightest star is 11.3; involved in a large, hazy patch of nebulosity; has a very small planetary nebulae (**NGC 2818A**). Also known as **Cr 206, Lund 497, Mel 96, OCL 743, Raab 82, Dunlop 564, h 3154, SGC 090528 -2325.1, and 2MASX J09074186 -2337172.**

NGC 2818A, mag. 11.6, 09 16 10.1 -36 37 37.0, 93"x55" in size, is a small, irregular shaped, double lobed planetary nebulae; central star (white dwarf) is magnitude 19.5. Also known as **PK 261+08.1, He2-23, ESO 372-013, and GSC 7164-3813.**

NGC 2627, mag. 8.4, 08 37 14.9 -29 57 01, 8.0"x8.0" in size, is an open cluster of 60 stars; detached, no concentration of stars; moderate range in brightness; brightest star is photo magnitude 11.0. Located 0.7° (41') southwest of **Alpha Pyxidid**. Also known as **H7-063, Cr 188, Lund 462, Mel 87, OCL 714, Raab 74, Ben 40, vdB-Ha 38, ESO 431-020, and C 835-297.**

NGC 2658, mag. 9.0, 08 43 27.3 -32 39 22.0, 12.0'x12.0' in size, is an open cluster of 80 stars. Located 0.7° (41') north of **Alpha Pyxidid**. Also known as **Cr 195, Lund 477, Mel 90, OCL 723, Raab 77, vdB-Ha 48, OCL 723.0, Dunlop 609, ESO 432-004, and C 841-324.**

There is on item of interest beyond magnitude 10:

Pyxis GC (Globular Cluster), mag. 12.9, 09 07 57.8 -37 13 17.0, 4' in size, is a 13.3 +/- 1.3 billion years old globular cluster located in the galactic halo, in the same plane as the **LMC (Large Magellanic Cloud)** – possibly an escapee from the **LMC**.

Deep Sky Objects in Pyxis – 14 NGC, 1 IC, 2 UGCA, 20 MCG, 10 CGCG, 6 PGC, 94 ESO – 8 expanded ESO, 6 P, 8 PK, 11 OCL, 9 Lund, 4 Ru, 2 h, 8 SGC, 4 IRAS, 7 2MASX, 4 AM, 6 Cr, 3 Radio Galaxies, 2 Abell, 3 AGC, 4 Mel, 4 Raab, 5 vdB-Ha, He-2, 3 Sa 2, 3 Dunlop, 1 PKS, 2 Slo, 2 K1, 2 Wray, 2 Al, 2 Herschel, 1 Str, 1 CG, 1 CGMW, 1 Min, 1 SaSt, 1 Ben, 1 VV, 1 AS, 1 ARO, 1 Pn, 1 [W95], and 1 Globular Cluster for a total of 268.

Other Stars:

TY Pyxidid, mag. 6.87 to 7.47, 08 59 42.72 -27 48 58.7, is an eclipsing binary variable star that emits X-rays. A companion star orbits the primary every 3.2 days.

HD 73256 (CS Pyxidid), mag. 8.08, 08 36 23.02 -30 02 15.5, is a yellow variable star (variable period

is 13.97 days) with a hot Jupiter sized planet - orbital period of 2.55 days. Also known as **HIP 42214**.

HD 77338, mag. 8.63, 09 01 00.0 -24 28 23.0, has one planet in orbit. Also known as **HIP 44291**.

HD 73267, mag. 8.90, 08 36 17.78 -34 27 35.9, is a yellow dwarf star with a super Jovian sized planet in a 1260-day orbit. Also known as **HIP 42202**.

RZ Pyxidis, mag. 9.17, 08 52 04.4 -27 29 01.5, is an eclipsing binary star – both stars are blue-white in hue. Also known as **HD 75920**, and **HIP 43541**.

There are 4 stars beyond magnitude 10 that are of interest:

XX Pyxidis, mag. 11.49, 08 58 39.04 -24 35 10.6, is a rotating ellipsoidal binary variable star. The primary is a white main sequence star, and the secondary is a red dwarf star with an orbital period of 1.15 days with a separation of 3 solar diameters.

Gliese 317, mag. 11.98, 08 40 59.21 -23 27 22.6, is a red dwarf star with one planet (**GJ 317b**) with a 693-day orbit, and one unconfirmed planet (**GJ 317c**) in a 2700 day orbit.

WASP-170, mag. 12.79, 09 01 39.9 -20 43 14.0, has one transiting planet in orbit.

T Pyxidis, mag. 15.5, 09 04 41.5 -32 22 47.5, is a recurrent white dwarf nova star that has a red dwarf companion. The white dwarf star is thought to be near the **Chandrasekhar Limit** and could become a type **1A Super Nova**. Located 4° east-northeast of **Alpha Pyxidis**.

Stars in Pyxis: 11 Greek; 41 Lettered; 8 ADS; 5β; 2 Ø; 2 See; 5 Gliese; 2 Kro; 6 HD; 9 h; 1 Hdo; 1 ho; 1 Hwe; 1 HN; 1 Hld; 1 Daw; 1 Arg; 1 Jc; 1 CorO; 1 Staone; 1 Rst; 1 WNO; and 1 WASP for a total of 113.

Sky Happenings: April 2022

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

- April 1st -** **New Moon** occurs at 11:24 AM CDT (Lunation 1228),
Dawn: **Venus, Saturn, and Mars** climb in the east-southeast in the brightening twilight.
- April 2nd -** **Mercury** is in superior conjunction at 6 PM CDT.
- April 3rd -** The **Moon** passes 0.6° south of **Uranus** at 12 noon CDT.
- April 4th -** Dawn: **Mars and Saturn** grace the east-southeast horizon a mere 0.5° apart,
Mars passes 0.3° south of **Saturn** at 5 PM CDT,
Evening: The thin lunar crescent, in the west, is hanging about 4° above the **Pleiades** in **Taurus**.
- April 6th -** The **Moon** passes 0.2° south of the dwarf planet **Ceres** at 4 AM CDT.
- April 7th -** The **Moon** is at apogee (251,306 miles or 404,438 km from **Earth**) at 2:11 PM CDT.
- April 8th -** Evening: High in the southwest, the waxing crescent **Moon, Castor, and Pollux** form an isosceles triangle in **Gemini**.
- April 9th -** **First Quarter Moon** occurs at 1:48 AM CDT,
Evening: The first-quarter **Moon** is 5° to the left of **Pollux** in **Gemini**.
- April 11th -** Asteroid **Pallas** is in conjunction with the **Sun** at 10 PM CDT.
- April 12th -** **Jupiter** passes 0.1° north of **Neptune** at 3 PM CDT.
- April 16th -** Dawn: **Jupiter, Venus, Mars, and Saturn** are in a string on the east-southeast horizon at twilight,
Full Moon occurs at 1:55 PM CDT.
- April 18th -** **Mercury** is 2° north of **Uranus** at 8 AM CDT.
- April 19th -** Morning: The waning gibbous **Moon, in Scorpius**, is around 6° to the right of **Antares**,
The **Moon** is at perigee (226,890 miles or 365,143 km from **Earth**) at 10:13 AM CDT.
- April 22nd -** The **Lyrid Meteor Shower** peaks at 1 PM CDT.
- April 23rd -** Morning: The **Lyrid Meteor Shower's** observation is somewhat hampered by the waning gibbous **Moon**,
Last Quarter Moon occurs at 6:56 AM CDT.
- April 24th -** The **Moon** passes 5° south of **Saturn** at 4 PM CDT.
- April 25th -** Dawn: In the southeast, the waning crescent **Moon, Saturn, and Mars** are in a triangle, with

- Jupiter** lower in the east,
 The **Moon** passes 4° south of **Mars** at 5 PM CDT.
- April 26th** - Dawn: The **Moon** is almost midway between **Venus** and **Mars**,
 The **Moon** passes 4° south of **Venus** at 9 PM CDT,
 The **Moon** passes 4° south of **Neptune** at 10 PM CDT.
- April 27th** - The **Moon** passes 4° south of **Jupiter** at 3 AM CDT,
 Dawn: Low in the east, the thin waning lunar crescent forms a tight triangle with **Jupiter** and **Venus**,
Venus passes 0.007° south of **Neptune** at 2 PM CDT.
- April 28th** - Asteroid **Hygiea** is at opposition at 10 PM CDT
- April 29th** - **Mercury** is at greatest eastern elongation (21°) at 3 AM CDT,
Mercury is 1.4° south of the **Pleiades** at 2 PM CDT,
 Dusk: **Mercury** is to the lower left of the **Pleiades**, very low in the west-northwest – catch them before they set.
- April 30th** - Dawn: **Jupiter** and **Venus** rise in the east with less than 0.5° separation,
Venus passes 0.21° south of **Jupiter** at 2 PM CDT,
New Moon occurs at 3:28 PM CDT,
Pluto is stationary at 4 PM CDT.

Planets:

Mercury – **Mercury** is at its best for **Northern Hemisphere** observers this month, achieving its best evening appearance of 2022. Following its superior conjunction with the **Sun** on April 2nd, the planet springs upward in the western evening sky, reaching greatest eastern elongation (21°) on the 29th. At the end of the first week of the month, the planet will be at magnitude -1.8 and will set within 30 minutes of the **Sun** on the western horizon. On the 9th, the planet will be about 1° high 30 minutes after sunset, but by the 13th it is 5° high, shining at magnitude -1.4 and will set an hour after the **Sun**. By the 16th, the planet is at magnitude -1.2 and will remain above the horizon 75 minutes after sunset with the **Pleiades (M45)** 18° above the planet. On the 17th, **Uranus** and **Mercury** are 2° apart. **Uranus** will be at magnitude +5.9 and will be just north of **Omicron Arietis**. On the 27th, **Mercury** is within 2.5° of the **Pleiades** and will close in to sit 1.5° due south of **Alcyone** at magnitude +0.2 on the 25th. By the end of the month the planet will fade to magnitude +0.5 and will stand 8° high an hour after sunset with a 33% lit crescent 8” wide.

Venus – **Venus** rises shortly before 5 AM local time on April 1st with **Saturn**, about 2 hours before sunrise. **Venus** is at magnitude -4.4, with **Saturn** at magnitude +0.7 – less than 4° to the right (southwest) of **Venus**. On the 4th, **Venus** moves into **Aquarius**. On the 25th, the planet and **Jupiter** are just 5° apart. On the 27th, **Venus**, at magnitude -4.1 – 66% illuminated with a 17” disk, is just 3° to **Jupiter’s** west (magnitude -2.1), and **Neptune** (at magnitude 7.8 and 2” diameter disk) is less than 24’ from **Venus**. On the 30th, **Venus** at magnitude -4.1, with a 17” disk at 67% illumination, and **Jupiter** at magnitude -2.1 with a 35” disk, are in conjunction at only 28’ separation. At 2 PM CDT, the two planets are only 12’ apart.

Mars – **Mars** rises shortly before 5 AM local time on April 1st, followed by **Saturn** and **Venus** within a few minutes of each other. **Mars**, at magnitude 1.1, will stand 2.4° to the upper right (west) of **Saturn**. On the 5th, **Mars** will be a mere 24’ below **Saturn**, with **Mars** at magnitude +1.0 and having a 5” diameter disk, and **Saturn** at magnitude +0.9 and having a 16” diameter disk – the best time to view them is at about 5:30 AM local time. **Mars** will cross into **Aquarius** on the 12th. On the 18th, **Jupiter** (magnitude -2.1), **Venus** (-4.2), **Mars** (+1.0), and **Saturn** (+0.9) are in a line at dawn, starting at the horizon and proceeding up and to the right, stretching nearly 32° long.

Jupiter – **Jupiter** is in conjunction (0.1° to the north) with **Neptune** on April 12th. On the 30th, **Jupiter** (-2.1 magnitude with a 35” disk) is in conjunction with **Venus** (-4.1 magnitude, 67% illumination, 17” disk) – they will be less than 28’ apart in the dawn sky, with both planets rising about 4:20 AM local daylight time. Follow them after sunrise into the daylight – around 2 PM CDT, the two planets are only 12’ apart with **Jupiter** due north of **Venus**. This conjunction, at this elongation (42° to 43°) from the **Sun**, will not be repeated until November of 2039.

Saturn – **Saturn** rises with **Venus**, only a few minutes apart, about 2 hours before sunrise on April 1st. On

the 4th, **Saturn** and **Mars** are only 30' apart, and on the 5th, they are only 24' apart. On the 18th, at dawn, a line of planets – **Jupiter**, **Venus**, **Mars**, and **Saturn** will form a line extending 32° long from the east-southeast horizon proceeding up and to the right with almost 11° between each of them.

Uranus – **Uranus** (magnitude 5.9) and **Mercury** are 2° apart on April 17th in the western sky. **Uranus** should be to the left of **Mercury** at about 10° high above the horizon. **Uranus** will be less than 1° from **Omicron Arietis**.

Neptune- **Neptune** has a close conjunction with **Jupiter** (0.1° north of **Neptune**) on April 12th. On the 27th, **Neptune** (magnitude 7.8, 2'' disk) is less than 24' from **Venus** (66% illuminated, 17'' disk). Because of the advancing twilight will cause the faint **Neptune** to fade out of view, catch it within one hour of **Venus** rising (at about 4:30 AM local time) in the east.

Moon – The **Moon** and **Uranus** (0.6° north of the **Moon**) are in conjunction on April 3rd. On the 6th, **Ceres** is 0.2° north of the **Moon**.

Favorable Librations: **Lyapunov Crater** on April 3rd; **Mare Marginis** on April 4th; **Shaler Crater** on April 17th; and **Gioja Crater** on April 21st.

Greatest North Declination on the 8th (+26.8°)

Greatest South Declination on the 22nd (-26.9°)

Libration in Longitude: East Limb most exposed on the 1st (+4.9°), and the 28th (+5.5°)

West Limb most exposed on the 14th (-6.0°)

Libration in Latitude: North Limb most exposed on the 25th (+6.8°)

South Limb most exposed on the 12th (-6.8°)

Asteroids / Minor Planets Asteroid **1 Ceres** – **Ceres**'s position, according to the *RASC Observer's Handbook, 2022 USA Edition*, on April 1st is 04 44.91 +24 20.6, at magnitude 8.8. **Ceres** positions, by my estimates, are as follows: On April 1st – about 1° northeast of **Tau Tauri**; on the 5th – about 1.5° northeast of **Tau Tauri**; on the 10th – about 1.1° northwest of **103 Tauri**; on the 15th – about 0.5° due north of **103 Tauri**; on the 20th – about 1.2° northeast of **103 Tauri**; on the 25th – about 0.7° northwest of **118 Tauri**, or 1.5° south and a touch west of **Beta Tauri (Elnath)**; and on the 30th – 0.7° northeast of **118 Tauri**, or 1.6° southeast of **Beta Tauri (Elnath)**.

Asteroid **4 Vesta** – **Vesta**'s positions, according to the *RASC Observer's Handbook, 2022 USA Edition*, are as follows: On April 1st – 20 48 34 -18 04 12, at magnitude 7.8 in **Capricornus**; on the 11th – 21 06.37 -17 12 54, at magnitude 7.7 in **Capricornus**; and on the 21st – 21 23.37 -16 21 48, at magnitude 7.6 in **Capricornus**.

Asteroid **7 Iris** – **Iris**'s position on April 1st, according to the *RASC Observer's Handbook, 2022 USA Edition*, is 07 30.54 +16 02 36, at magnitude 9.8 in **Gemini**.

Asteroid **8 Flora** – **Flora**'s positions, according to the *RASC Observer's Handbook, 2022 USA Edition*, are as follows: On April 1st – 13 47.53 -00 49 06, at magnitude 9.9 in **Virgo**; on the 11th – 13 37.99 +00 14 30, at magnitude 9.7 in **Virgo**; and on the 21st – 13 28.05 +01 09 24, at magnitude 9.8 in **Virgo**. **Flora**'s positions, by my estimates, are as follows (note: all positions are referenced to **Zeta Virginis**): On April 2nd – about 2.9° due east; on the 4th – about 2.4° due east; on the 6th – about 2° due east and a little north; on the 8th – about 1.6° east-northeast; on the 10th – about 1.2° northeast; on the 12th – about 1.1° north-northeast; on the 14th – about 1.2° due north; on the 16th – about 1.3° north and a little west; on the 18th – about 1.7° north-northwest; on the 20th – about 2.1° northwest; on the 22nd – about 2.6° northwest; on the 24th – about 3.0° northwest; on the 26th – about 3.5° northwest; on the 28th – about 4.0° northwest; and on the 30th – about 4.6° northwest.

Asteroid **10 Hygiea** – **Hygiea**'s positions, according to the *RASC Observer's Handbook, 2022 USA Edition*, are as follows: On April 1st – 14 36.29 -20 52.0, at magnitude 9.8 in **Libra**; on the 11th – 14 30.58 -20 32 12, at magnitude 9.6 in **Libra**; and on the 21st – 14 23.39 -19 59 54, at magnitude 9.3 in **Libra**. **Hygiea**'s positions, by my estimates, are as follows: On April 2nd – about 5.6° southwest of **Alpha Librae (Zubenegenubi)**; on the 4th – about 5.9° southwest of **Alpha Librae**; on the 6th – about 6.0° southwest of **Alpha Librae**; on the 8th – about 6.1° southwest of **Alpha Librae**; on the 10th – about 6.2° southwest of **Alpha Librae**; on the 12th – about 6.4° southwest of **Alpha Librae**; on the 14th – about 6.7° southwest of **Alpha**

Librae; on the 16th – about 6.9° southwest of **Alpha Librae**, or 7.0° south and a little east of **Lambda Virginis**; on the 18th – about 6.8° south and a little east of **Lambda Virginis**; on the 20th – about 6.6° south and a little east of **Lambda Virginis**; on the 22nd – about 6.4° south and a little east of **Lambda Virginis**; on the 24th – about 6.2° south and a touch east of **Lambda Virginis**; on the 26th – about 6.1° due south of **Lambda Virginis**; on the 28th – about 6.0° due south with a touch west of **Lambda Virginis**; and on the 30th – about 5.8° due south with a touch west of **Lambda Virginis**.

Asteroid **15 Eunomia** – **Eunomia's** positions, according to the *RASC Observer's Handbook, 2022 USA Edition*, are as follows: On April 11th – 13 14.38 -26 24 12, at magnitude 9.9 in **Hydra**; and on the 21st – 13 05.36 -25 31 42, at magnitude 9.8 in **Hydra**. **Eunomia's** positions, *by my estimates*, are as follows: On April 2nd – about 3.9° south and a little east of **Gamma Hydrae**, or 0.4° north and a touch east of **NGC 5101**; on the 4th – about 3.7° south and a little east of **Gamma Hydrae**, or 0.5° north and a little east of **NGC 5078**; on the 6th – about 3.5° due south of **Gamma Hydrae**, or 0.2° northeast of **NGC 5061**; on the 8th – about 3.5° south and a touch west of **Gamma Hydrae**, or 0.3° northwest of **NGC 5061**; on the 10th – about 3.4° south and a touch west of **Gamma Hydrae**, or 0.7° northwest of **NGC 5061**; on the 12th – about 3.5° south-southwest of **Gamma Hydrae**, or 1.2° northwest of **NGC 5061**; on the 14th – about 3.4° south-southwest of **Gamma Hydrae**, or 1.6° west-northwest of **NGC 5061**, or 3.1° south and a little east of **Psi Hydrae**; on the 16th – about 2.8° south and a touch east of **Psi Hydrae**; on the 18th – about 2.7° south and a touch west of **Psi Hydrae**; on the 20th – about 2.6° south and a touch west of **Psi Hydrae**; on the 22nd – about 2.5° south and a touch west of **Psi Hydrae**; on the 24th – about 2.4° south and a little west of **Psi Hydrae**; on the 26th – about 2.7° southwest of **Psi Hydrae**; on the 28th – about 2.6° southwest of **Psi Hydrae**; and on the 30th – about 2.9° southwest of **Psi Hydrae**.

Comets – Comet **19P/Borrelly** – **Borrelly's** positions (an evening comet), according to **ALPO**, are as follows: On April 1st – 04 23 42 +36 48 18, at magnitude 10.2 in **Perseus**; on the 11th – 05 00 48 +39 38 36, at magnitude 11.4 in **Auriga**; on the 21st – 05 39 00 +41 36 18, at magnitude 11.8 in **Auriga**; and on May 1st – 06 17 30 +42 43 36, at magnitude 12.2 in **Auriga**.

Comet **22P/Kopff** – **Kopff's** positions (a morning comet), according to **ALPO**, are as follows: On April 1st – 21 35 36 -13 46 42, at magnitude 10.9 in **Capricornus**; on the 11th – 22 04 12 -11 43 00, at magnitude 10.9 in **Aquarius**; on the 21st – 22 31 24 -09 35 06, at magnitude 11.0 in **Aquarius**; and on May 1st – 22 57 12 -07 26 54, at magnitude 11.1 in **Aquarius**.

Asteroid **C/2017 K2 (PANSTARRS)** – **K2's** positions (a morning comet) according to **ALPO**, are as follows: On April 1st – 18 54 06 +11 36 42, at magnitude 9.5 in **Aquila**; on the 11th – 18 55 12 +11 44 12, at magnitude 9.2 in **Aquila**; on the 21st – 18 54 24 +11 47 36, at magnitude 9.0 in **Aquila**; and on May 1st – 18 51 06 +11 43 00, at magnitude 8.7 in **Aquila**.

Comet **C/2019 L3 (ATLAS)** – **L3's** positions (an evening comet), according to **ALPO**, are as follows: On April 1st – 06 42 30 +16 38 24, at magnitude 9.5 in **Gemini**; on the 11th – 06 48 24 -15 19 00, at magnitude 9.6 in **Gemini**; on the 21st – 06 55 30 +14 03 06, at magnitude 9.8 in **Gemini**; and on May 1st – 07 03 30 +12 49 12, at magnitude 9.9 in **Gemini**.

Comet **C/2019 T4 (ATLAS)** – **T4's** positions (an evening comet), according to **ALPO**, are as follows: On April 1st – 11 51 24 -21 27 30, at magnitude 11.7 in **Crater**; on the 11th – 11 48 00 -19 12 30, at magnitude 11.7 in **Crater**; on the 21st – 11 45 30 -16 54 06, at magnitude 11.7 in **Crater**; and on May 1st – 11 44 06 -14 38 12, at magnitude 11.8 in **Crater**.

Comet **C/2021 O3 (PANSTARRS)** – **O3's** positions (visible in the evening in early May after perihelion), according to **ALPO**, are as follows: On April 1st – 01 08 18 -01 05 18, at magnitude 1.2 in **Cetus**; on the 11th – 01 54 12 -01 00 54, at magnitude 9.3 in **Cetus**; on the 21st – 02 51 54 +03 21 00, at magnitude 7.3 in **Cetus**; **O3** reaches perihelion on the 22nd at a distance of 0.29 au; and on May 1st –

03 33 12 +23 46 42, at magnitude 7.8 in **Taurus**. **O3's** positions, *by my estimates*, are as follows: On April 20th – about 2° due east of **Gamma Ceti**, or 3° west and a little south of **Alpha Ceti (Menkar)**; on the 25th – about 4° northwest of **Xi Tauri**, or about 4° due west of **4 Tauri**; and on the 30th – about 4° northwest of the **Pleiades**

(M45) in Taurus.

Meteor Showers – There are 2 Major (Class I) meteor showers active in April: The **Lyrids** - active from April 15th through April 29th, peaks on April 22 with a mzh of 18; and the **Eta Aquarids** – active from April 15th through May 27th, peaks on May 5th.

There are no **Minor (Class II)** meteor showers active in April.

There is one **Variable (Class III)** meteor shower active in April – The **Pi Puppids**, active from April 16th through April 30th, peaks on April 24th.

There are 5 **Weak (Class IV)** meteor showers – all have a mzh of <2, active in April: The **Delta Pavonids**, active from March 3rd through April 16th, peaked on March 31st; the **April Epsilon Delphinids**, active from March 31st through April 20th, peaks on April 9th; the **Kappa Serpentids**, active from April 11th through April 22nd, peaks on April 16th; the **Alpha Virginids**, active from April 6th through May 1st, peaks on April 18th; and the **h Virginids**, active from April 24th through May 4th, peaks on May 1st.

When to View the Planets:

Evening Sky

Mercury (west)
Uranus (west)

Midnight

Morning Sky

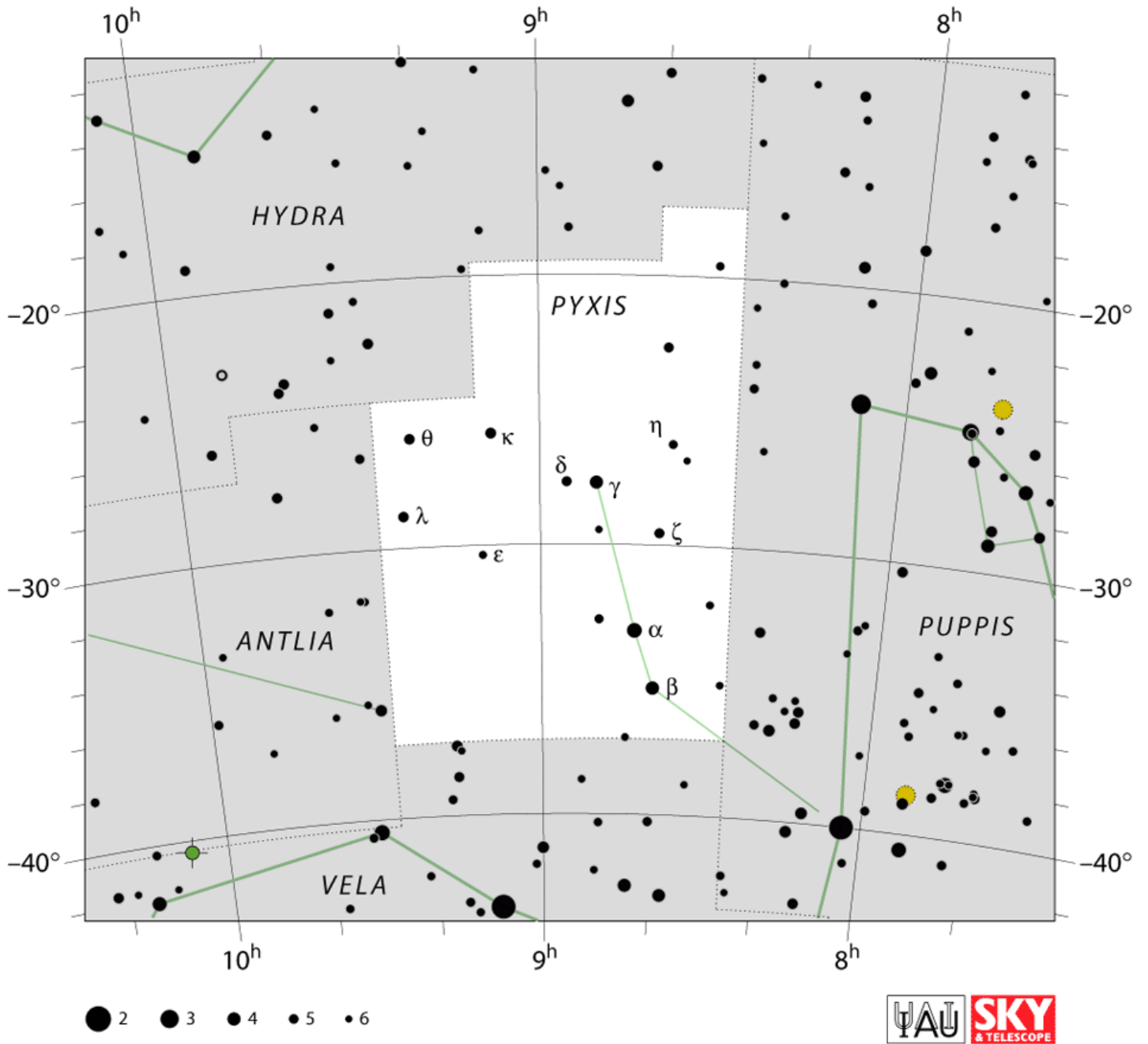
Venus (east)
Mars (east)
Jupiter (east)
Saturn (southeast)
Neptune (east)

DARK SKY VIEWING - PRIMARY ON APRIL 9TH, SECONDARY ON APRIL 16TH

Mythology:

Pyxis Nautica – The Mariner’s Compass

Pyxis is a small southern constellation invented by the Frenchman Nicolas Louis deLacaille during his survey of the southern skies in 1751-1752. Pyxis represents a magnetic compass as used by seamen and is located near the stern of the ship Argo. Its brightest stars are only fourth magnitude and there are no legends associated with it – indeed, the magnetic compass was completely unknown to the ancient Greeks.



The End