The Bays Mountain Astronomy Club Newsletter

June 2025

Kingsport, TN

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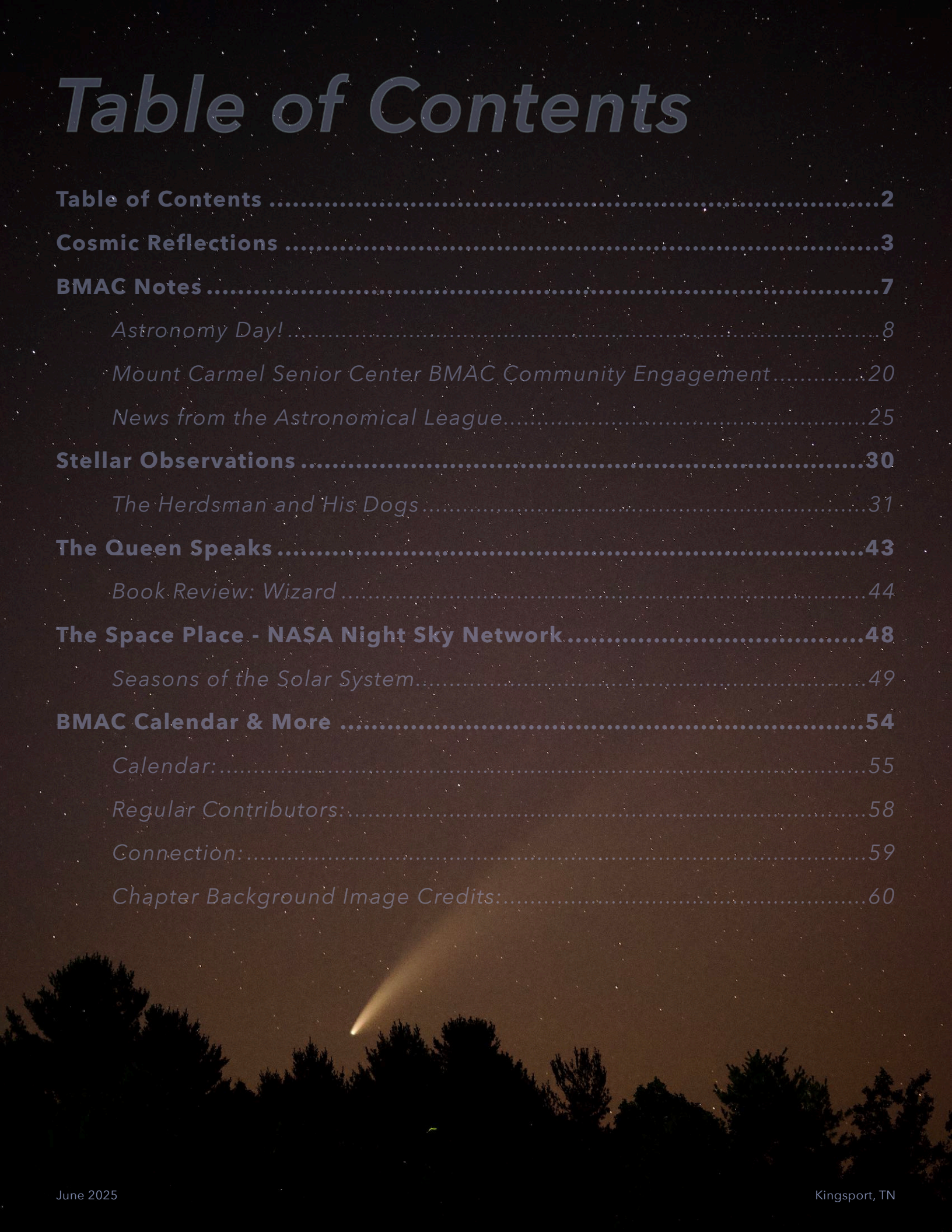


Cosmic Reflections

Greg Penner - BMAC Chair

reetings BMAC’ers!

The longer days of summer are upon us, which also means that the nights are shorter. Those shorter nights are filled with lots of stars though, as the summer Milky Way makes its presence known. Hopefully you will be getting out to some dark skies so you can appreciate some celestial wonders!

Recapping the month of May, we had our annual student presentations at our May club meeting. As usual, the work that our local students are doing is quite impressive, and we appreciate them for sharing with us. On Saturday, May 17th we had Astronomy Day in conjunction with Kids at Bays Day at the park. We were set up at the Pavillion as usual and had dozens of youngsters and their families come walk through our exhibits and demonstrations as they experienced many aspects of astronomy. We had a sundial craft, scale model of the sun and planets, 3-D model of a nebula, a working Lego orrery, a “how

far can you jump on the moon" demonstration, crater demonstration, and viewing the sun through a telescope. The day was filled with much laughter and oohs and aahs by the kids (and parents/grandparents). Perhaps some of the kids who participated will be inspired to pursue astronomy and one day present a project at our club meeting!

Coming up at our next meeting on June 6th, we will be watching a video titled "Getting Ready for the Next Galactic Supernova". This video will describe what happens when a star goes supernova and why it is important for the astronomical community to be prepared. Even amateurs like you and me can help with the preparations by being part of an early warning system. So come to the June meeting to hear more about this exciting topic! **SPECIAL NOTE ABOUT THIS MEETING** – we will be meeting at the Farmstead building (the log structure at the top of the parking lots). There will be an event in the planetarium theater that night, so go directly up to the Farmstead parking lot when you arrive.

Looking further ahead, plans are in the works for our annual summer picnic in July. Remember, this is an event for members and their families only. If you've been thinking about joining the club as an official member, now is a great time so you can take part in this and other members-only events. Members will be getting more information about the plans for the picnic as we get closer to the date. Looking even further ahead, plans are coming together for our annual StarFest event. We have caterers booked, and I can assure you that the food will be great again this year! Be on the lookout for more StarFest developments later in the summer.

Looking forward to seeing everyone at the June meeting!

Clear Skies!

BMAC Notes

Astronomy Day!

n May 17th was our annual Astronomy Day at Bays Mountain. If you are interested in helping next year, it is never too late to go ahead and go through the volunteer program at the park! There were plenty of activities, from figuring out how much you weighed on three different planets, to showing the 3D printed map of Mars and the Perseverance and Ingenuity path.

BMACer Michael Hopkins wrote about making a solar-system model for Astronomy Day:

At this year's astronomy day there was a scale model of the solar system including an 8ft diameter sun. This was a 4 weeklong project provided by Michael Hopkins. The complete set of planets scaled at 1:575,000,000 which meant the sun was still 8.35ft in diameter. He used his Bambu A1 3D multicolored printer for all but the sun. The ring around Saturn were 8 pieces printed in transparent clear filament. The models of the planets

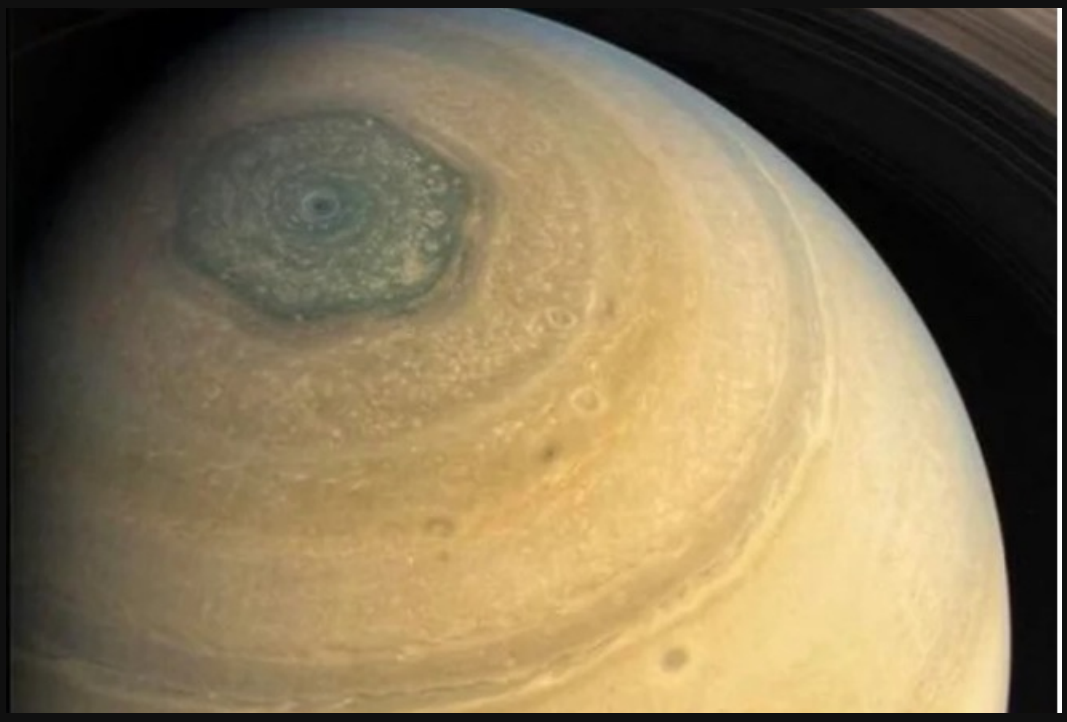
were printed, sub-assembled, primed, airbrushed and clear coated. The planets were airbrushed to match the natural colors for NASA photos.

Michael working on airbrushing his 3D printed planets. Pictured is Jupiter.

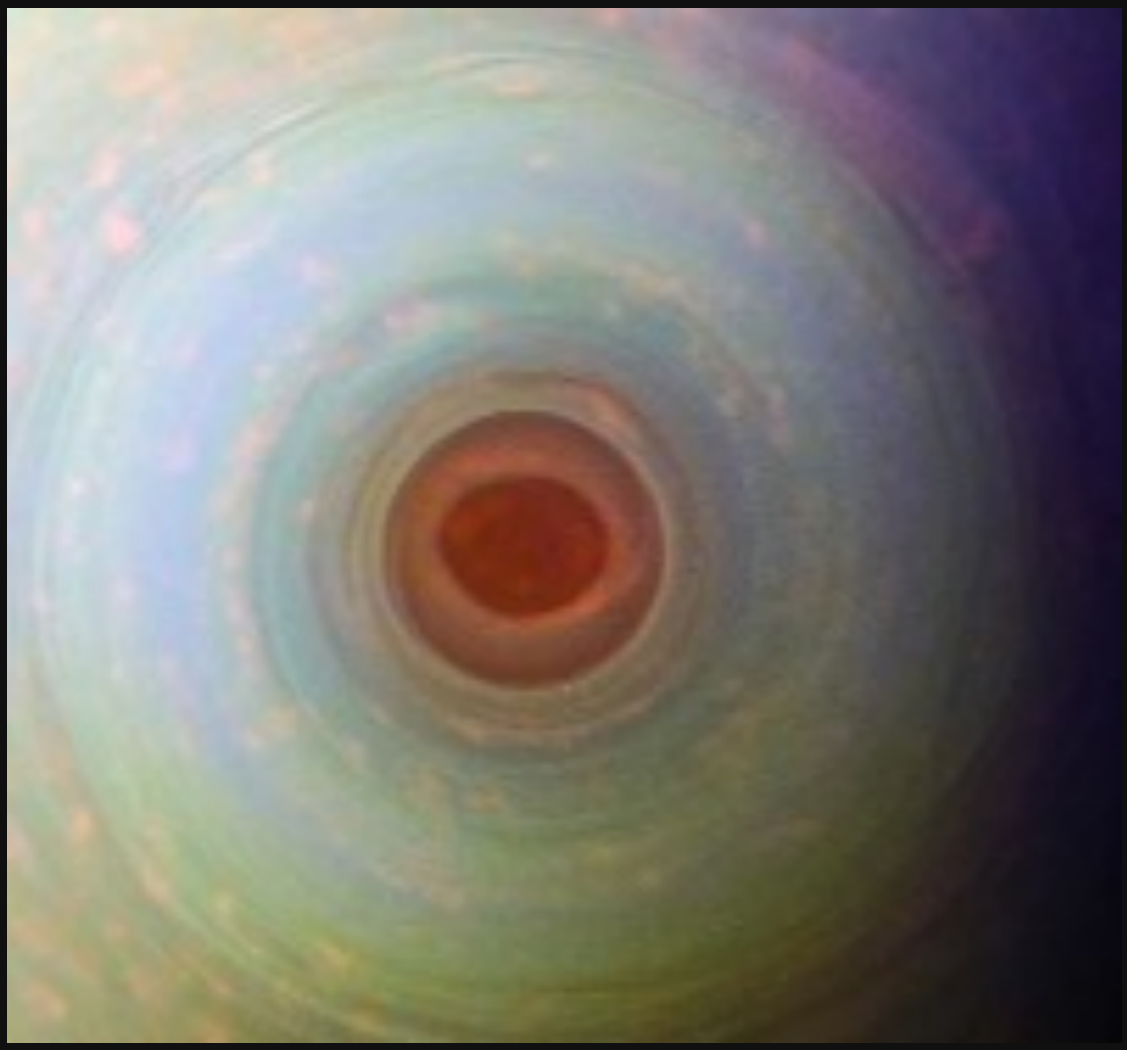
Showing that truly, that 11 Earths can fit as the diameter!

It turns out as we have been told that 11 earths can fit the diameter of Jupiter. Surprising were the north and south poles of Saturn and Jupiter which we never see through our telescopes.

Saturn has a hexagon shape on the north pole and a dark orange and red spot of the south pole. These were interesting feature added with airbrush to he scaled models.



A snapshot of Saturn's north pole's hexagon shape.



Saturn's southern pole.

Jupiter also had interesting colors, rings and storms on the north and south poles.

Jupiter's northern pole, as seen from the Juno spacecraft.

Jupiter's southern pole, as seen from the Juno spacecraft.

The Sun turned out to be a ring of PVC water pipe painted yellow covered with yellow plastic snow fencing. The sun was the backdrop behind the planets to help show the immensity of size differences.

Here is a photo of the displays:

The finished and final project. Photo taken by Greg Penner.

Getting to look through a solar telescope with Greg Penner.

DIY sundial!

Our own Robin Byrne helping a family make an activity.

Michael beside his display at Astronomy Day.

Adam Thanz doing a make a crater activity with some kids.

Mount Carmel Senior Center BMAC Community Engagement

May 1st and 20th:

A call to Bays Mountain Park from an NSCC student (one of Adam's) who is the activities director at a Mount Carmel Senior Facility requested an activity for the residents. Two days in May were scheduled with BMAC volunteer Michael Hopkins to present and interact with the residents. Michael's wife Lura Hopkins also a BMAC member, completed the Bays Mountain Park Volunteer program to support these activities.

It's interesting to discover the wealth of knowledge and experiences of the residents who walked and rolled over to see the strange equipment and displays being setup. Tossed a blow-up Moon to them first thing. The hands-on displays were exciting and unique. They asked so many questions and were truly engaged in the activities. Looking through the telescope was a challenge for some of them, so Michael hopes to make

this easier next time the telescope is set up for them. The presentation of the James Webb Space Telescope proved to be their first knowledge of these advances in astronomy. The session ended with them wanting to learn about constellations.

The second visit was two weeks later after Astronomy day. Michael was quite pleased to have help from Lura. She took on the constellation presentation and made it interesting and fun. Lura learned a bunch preparing for they residents who would be eager to learn what all those constellations looked like but why they were created by our ancestors. She put together a hands-on game to draw cards and then find their constellation on the poster. Michael brought the scale model of our solar system including the Sun which was projected on the wall which was over 8′ diameter. It was encouraging to hear some of them wanting to tell their grand and great grandchildren about what they were experiencing.

Michael showing a display at the Mount Carmel Senior Center.

Lura giving a presentation about the constellations.

Michael and Lura showing a display.

Michael showing off his Saturn model.

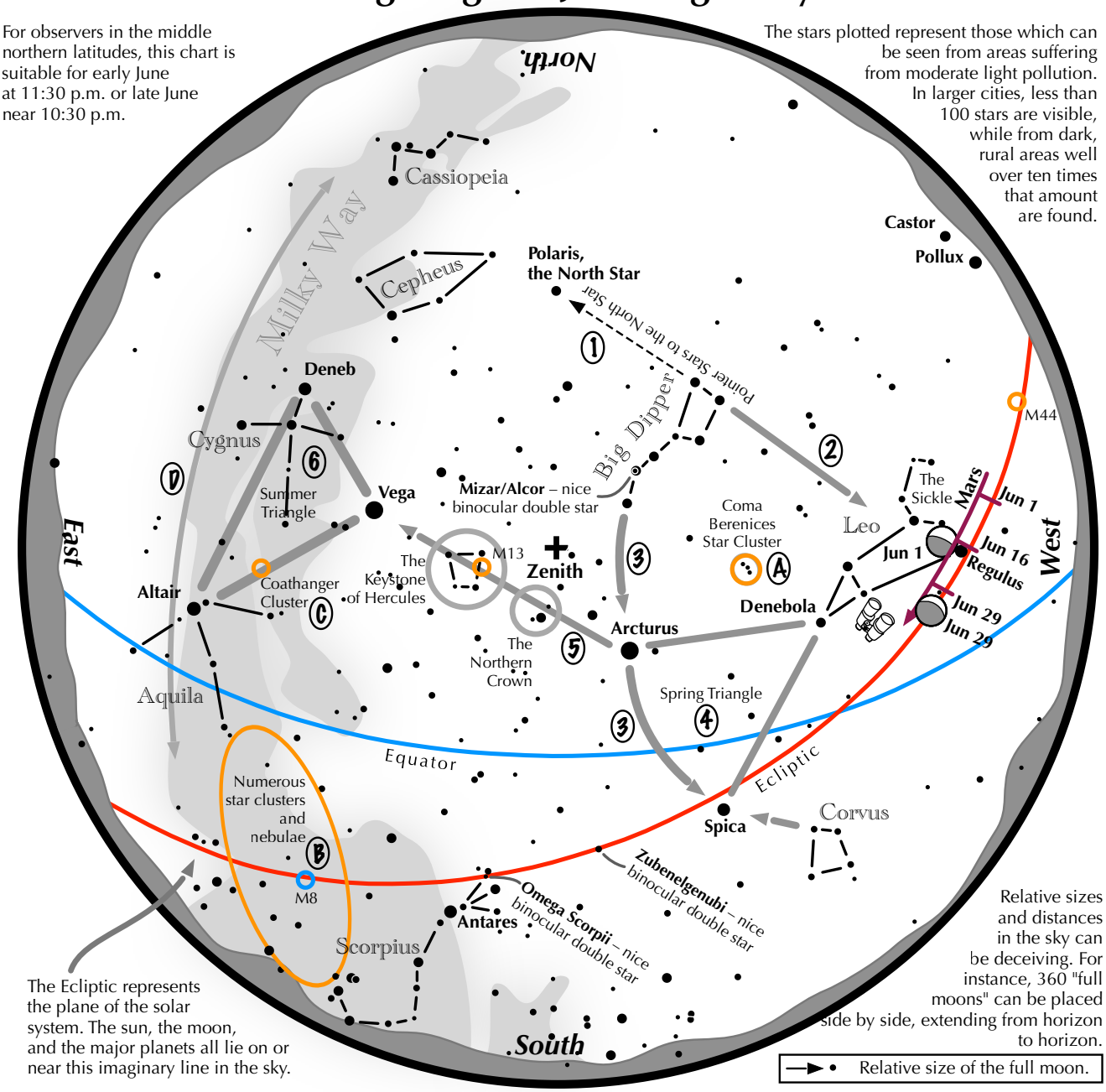
News from the Astronomical League

The Astronomical League has a plethora of educational content to help you learn and enjoy the night sky more. The following inserts are just a tiny bit of what they provide.

Navigating the June Night Sky

For observers in the middle northern latitudes, this chart is suitable for early June at 11:30 p.m. or late June near 10:30 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

Relative size of the full moon.

Navigating the June night sky: Simply start with what you know or with what you can easily find.

1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Draw another line in the opposite direction. It strikes the constellation Leo high in the west.
3. Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the June evening sky, then Spica.
4. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
5. To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
6. High in the east are the three bright stars of the Summer Triangle: Vega, Altair, and Deneb.

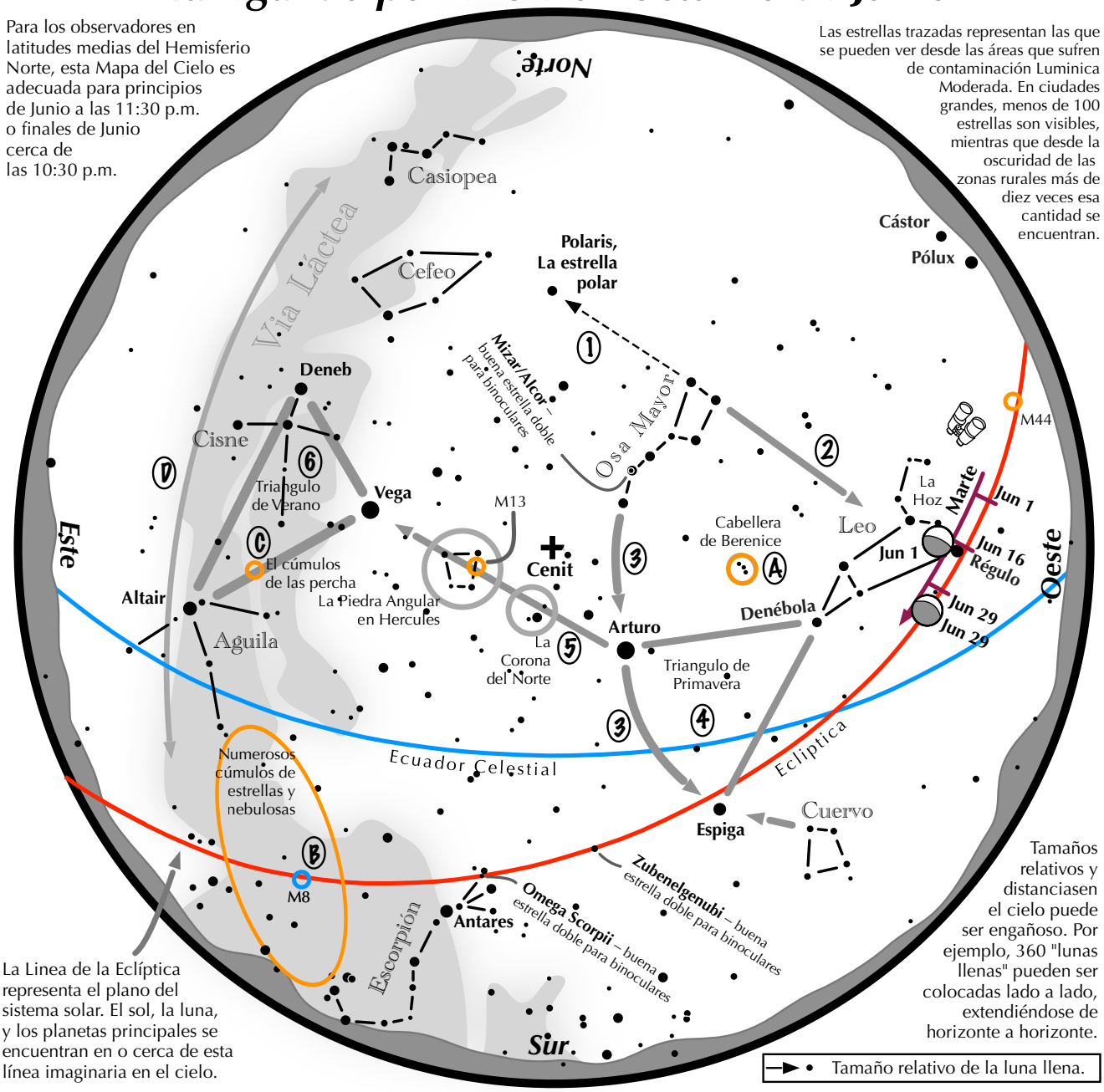
Binocular Highlights

A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
B: Between the bright stars of Antares and Altair, hides an area containing many star clusters and nebulae.
C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
D. Sweep along the Milky Way for an astounding number of faint glows and dark bays.

Navegando por el cielo nocturno de Junio

Para los observadores en latitudes medias del Hemisferio Norte, esta Mapa del Cielo es adecuada para principios de Junio a las 11:30 p.m. o finales de Junio cerca de las 10:30 p.m.

Las estrellas trazadas representan las que se pueden ver desde las áreas que sufren de contaminación Luminica Moderada. En ciudades grandes, menos de 100 estrellas son visibles, mientras que desde la oscuridad de las zonas rurales más de diez veces esa cantidad se encuentran.



La Linea de la Eclíptica representa el plano del sistema solar. El sol, la luna, y los planetas principales se encuentran en o cerca de esta línea imaginaria en el cielo.

Tamaños relativos y distanciasen el cielo puede ser engañoso. Por ejemplo, 360 "lunas llenas" pueden ser colocadas lado a lado, extendiéndose de horizonte a horizonte.

→• Tamaño relativo de la luna llena.

Navegando por el cielo nocturno: simplemente comience con lo que sabe o con lo que puede encontrar fácilmente.

1. Haz una línea hacia el norte desde las dos estrellas en la punta de la Osa Mayor. Pasa por Polaris, la estrella polar.
2. Directamente debajo del tazón de la Osa Mayor se encuentra Leo con su estrella principal, Régulo.
3. Siga el arco del mango del tazón de la Osa Mayor. Primero cruza Arturo, luego continúa hacia Espiga, luego Cuervo.
4. Arturo, Espiga y Denébola forman el triángulo de primavera, un gran triángulo equilátero.
5. Dibuja una línea desde Arturo a Vega. Un tercio del camino se encuentra "La Corona del Norte". Dos tercios de esa distancia llevan a la "piedra angular de Hércules." Se necesita un cielo oscuro para ver estas dos configuraciones estelares tenues.
6. En lo alto del este se encuentran las tres estrellas brillantes del Triángulo de verano: Vega, Altair y Deneb.

Puntos destacados con binoculares

A: Mira alto en el este para ver el cúmulo de estrellas perdidas de Cabellera de Berenice. **B:** Entre las brillantes estrellas de Antares y Altair, se esconde un área que contiene muchos cúmulos de estrellas y nebulosas. **C:** El 40% del camino entre Altair y Vega, centellea el "Colgador", un grupo de estrellas que describe un perchero. **D.** Barrer a lo largo de la Vía Láctea para obtener una cantidad asombrosa de brillos tenues y bahías oscuras.

Traducción al español por Dr. Salvador Aguirre

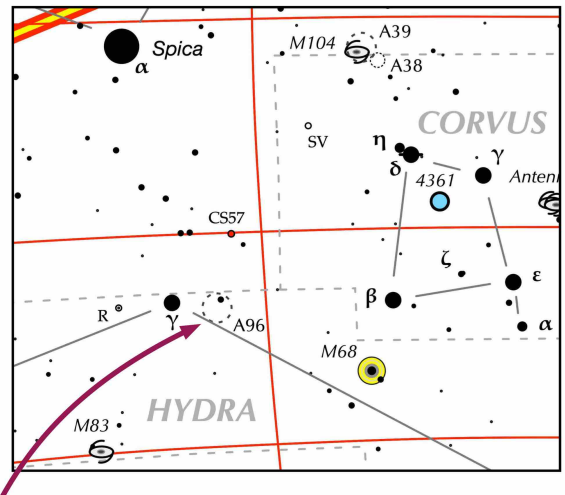
Seahorse Asterism

On the Astronomical League's Asterism list as no. 96

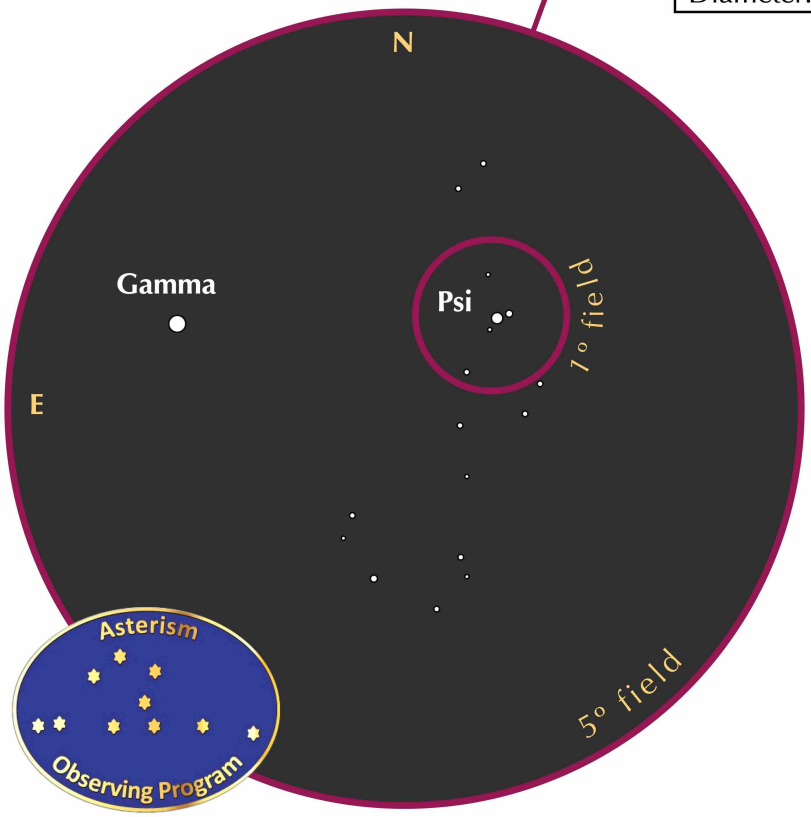
How to find the Seahorse ...

1. 10º south of Spica lies 3rd magnitude Gamma Hydrae. (10º is the angular width of your fist on your outstretched arm.)
2. Place Gamma at the center of the finder (or binocular) field.
3. At the west edge of the finder (or binocular) field lies the 4.9 magnitude Psi Hydrae.
4. Aim the finder (or binoculars) at Psi.
5. Follow the string of 7th, 8th, and 9th magnitude stars as it roughly traces the outline of a seahorse.

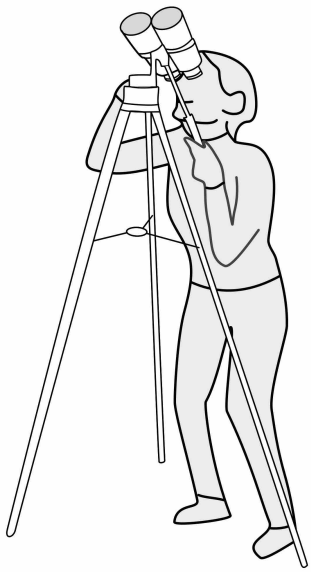
To see it through a finderscope or binoculars, clear, dark skies are a must!



96 Asterism: Seahorse
Magnitudes: 4.9 – 9.6
Diameter: 15 x 90 arc–minutes



Use a tripod to help bring in the asterism's 7th, 8th, and 9th magnitude stars.



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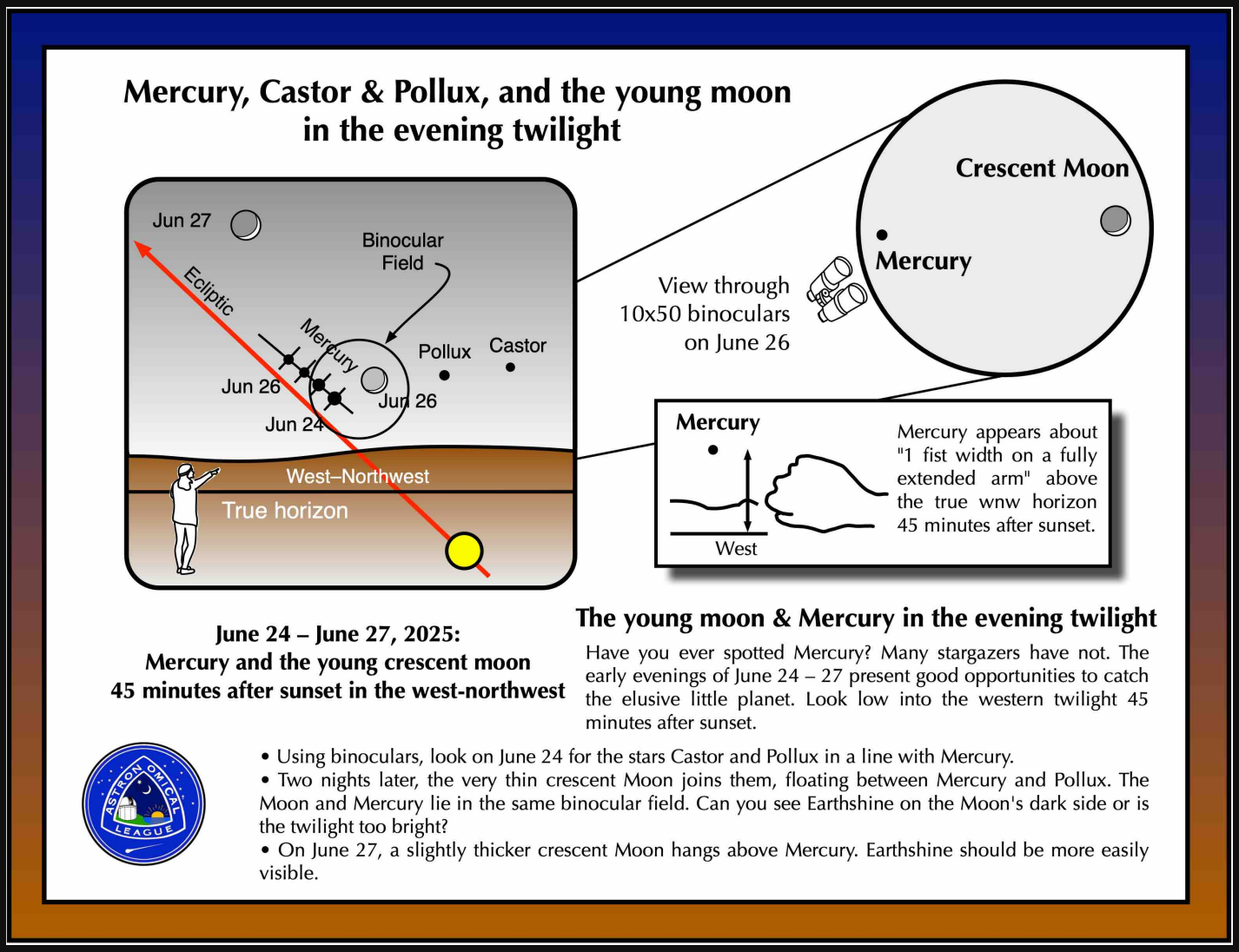

Mercury, Castor & Pollux, and the young moon
in the evening twilight
Jun 27
Binocular
Field
Ecliptic
Mercury
Pollux
Castor
Jun 26
Jun 26
Jun 24
West–Northwest
True horizon
Crescent Moon
Mercury
View through
10x50 binoculars
on June 26
Mercury
West
Mercury appears about "1 fist width on a fully extended arm" above the true wnw horizon 45 minutes after sunset.
June 24 – June 27, 2025:
Mercury and the young crescent moon
45 minutes after sunset in the west-northwest
The young moon & Mercury in the evening twilight
Have you ever spotted Mercury? Many stargazers have not. The early evenings of June 24 – 27 present good opportunities to catch the elusive little planet. Look low into the western twilight 45 minutes after sunset.
• Using binoculars, look on June 24 for the stars Castor and Pollux in a line with Mercury.
• Two nights later, the very thin crescent Moon joins them, floating between Mercury and Pollux. The Moon and Mercury lie in the same binocular field. Can you see Earthshine on the Moon's dark side or is the twilight too bright?
• On June 27, a slightly thicker crescent Moon hangs above Mercury. Earthshine should be more easily visible.

Stellar Observations

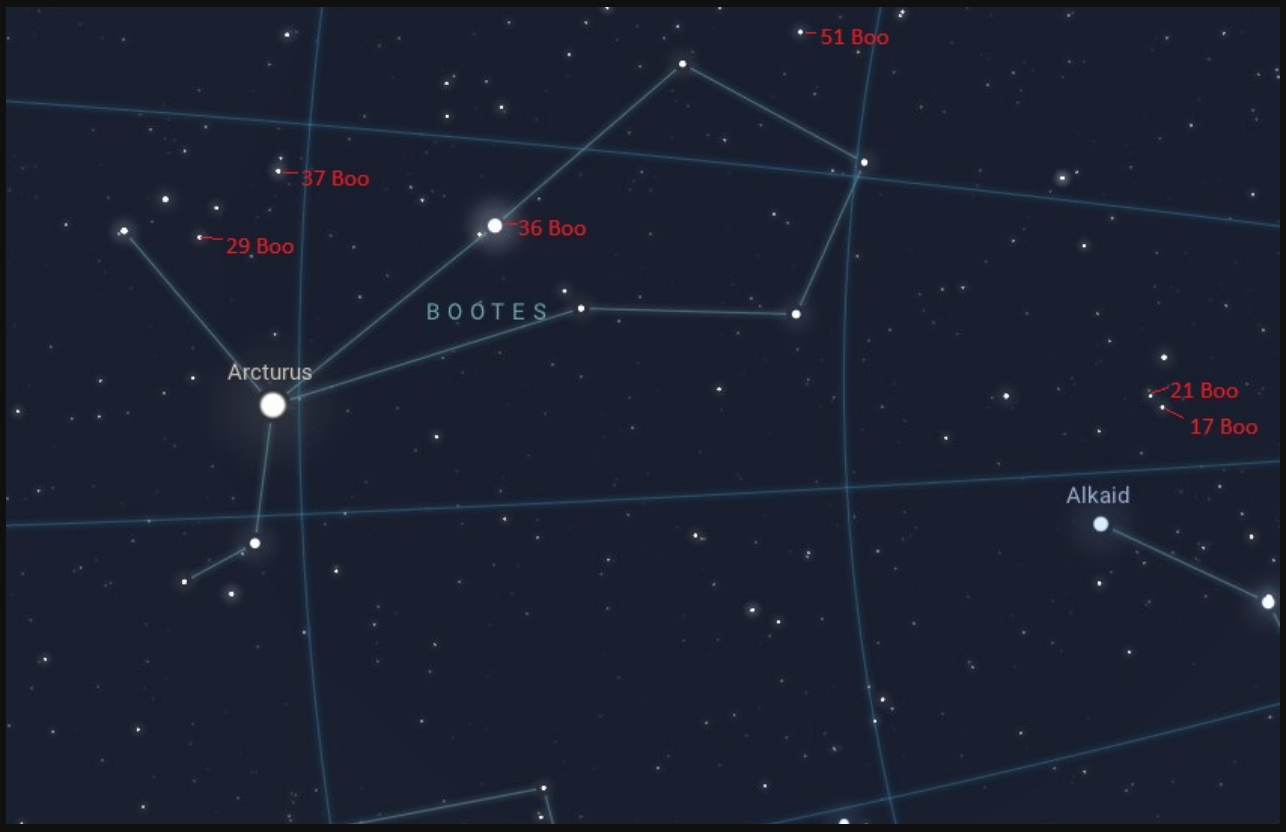
Greg Penner

The Herdsman and His Dogs

High in the sky in the month of June you will find the constellation Boötes, the Herdsman (although the shape made by these stars looks more like a kite). Between Boötes and Ursa Major, you will see a pair of 3rd and 4th magnitude stars that, for some unknown reason in the 16th century, were deemed to represent two hunting dogs and thus form the constellation Canes Venatici. Observing this area of the sky on a June evening will yield a nice variety of stellar treasures for small to medium size telescopes.

Bootes / Canes Venatici area for orientation - image from Stellarium

This part of the sky is populated with numerous fine double and triple stars, most within the borders of Boötes. You might think of them as the “herd” that the Herdsman is watching over. Double stars are one of my favorite types of objects because the light polluted urban/suburban skies that most of us must deal with do not affect their visibility, and a small telescope is usually sufficient to enjoy these gems.



Double Stars in Bootes - image from Stellarium, annotated by Greg Penner

Stars in Canes Venatici - image from Stellarium, annotated by Greg Penner

Kappa (17) Boötis –This is a nice double star to start with, being naked-eye visible and near the end of the Big Dipper's handle, it is easy to find. Kappa's components are magnitude 4.6 and 6.6 with a separation of 13.4 arcseconds, easy to split in a small telescope. The primary is white, and the secondary has a bluish tint.

Kappa Bootis - image by Jim Mazur, used by permission

Iota (21) Boötis – Less than a degree to the southeast of Kappa, Iota is an easy double to resolve as its components are about 38 arcseconds apart and magnitudes 4.9 and 7.5. The primary is a yellowish color, and some people report seeing a bluish tint in the dimmer secondary star. Double stars are known to fool the eye when it comes to colors, so these may not be the actual colors of these stars. What do you see?

Pi (29) Boötis – Our next double is way over on the other side of the Herdsman, about 5 degrees from mighty Arcturus. Pi is very similar to Kappa with components of 4.9 and 5.8 magnitude, but much closer together with a separation of only about 5 arcseconds. Does your telescope split this close pair?

Pi Bootis - image by Jim Mazur, used by permission

Xi (37) Boötis – About 4 degrees to the northeast of Pi, this double is quite a beautiful sight through a small telescope, and interesting in other ways. To most observers they appear as a yellow/orange and purplish combo at magnitudes 4.8 and 7.0, separated by only 6 arcseconds. This star system is only 22 light years from Earth, very close by astronomical standards! Their separation varies anywhere from 2.5 to 7 arcseconds depending on where they are in their 152 year orbit around each other. The actual physical mean separation between these stars is 33.5

Xi Bootis - image by Jim Mazur, used by permission

astronomical units (about the distance of Neptune from the Sun). The distance varies between 50.5 and 16.4 AU. They were last closest together in 1909 and will be again in 2054, so make this a very long-term observing project to watch!

Epsilon (36) Boötis – Also known as Izar, this is one of the finest double stars in the sky. Composed of magnitudes 2.9 and 4.9 stars and separated by only 2.8 arcseconds, Izar is a real showpiece. Most people report seeing the primary as a yellow or orange color and the secondary as greenish, making quite a beautiful color contrast. Use the maximum useful magnification eyepiece to split this outstanding close double star.

Mu (51) Boötis – The final multiple star in Boötes is an intriguing triple system given the name Alkalurops by ancient astronomers (appropriately meaning “shepherd’s staff”). The yellowish primary is a 4.3 magnitude star (Alkalurops A), which would have been the only star in the system that the ancients saw. When viewed through a telescope at moderate power, you will see a 7th magnitude companion star 108 arcseconds away from

the primary. But if you ramp up the magnification on this companion star, you should see a pair of orange-colored stars, magnitude 7.0 and 7.6 separated by only 2.3 arcseconds (Alkalurops BC). These two stars orbit each other every 260 years at an average distance of 54 AU. The BC pair lies at least 4000 AU distant from Alkalurops A and takes at least 125,000 years to complete a full orbit.

Turning our attention now to Canes Venatici, we will find a few more stars of interest.

Alpha (12) CVn – Also known as Cor Caroli, which means "Charles' Heart" (named by Edmund Halley in honor of England's King Charles II), this star is the brightest in Canes Venatici. The primary is magnitude 2.9 separated from the 5.5 magnitude secondary by 19.4 arcseconds. The real separation of these stars is about 675-770 AU, and they are about 120 light years from Earth. Through a telescope the primary is a bright blue-white, and the secondary has a lilac hue.

Cor Caroli - image by Jim Mazur, used by permission

2 CVn – About four degrees to the west from Beta CVn, this double star is composed of a 5.8 magnitude primary and an 8.1 magnitude secondary separated by 11 arcseconds. A beautiful color contrast of golden yellow and pale blue can be seen in this pair.

Y CVn – The final star in our tour around the Herdsman and his dogs, this star is perhaps the most unique. Not a double star, but a variable star with a range from magnitudes 4.8 to 6.4 over a period of 157 days, Y Canum Venaticorum was given the more illustrious name “La Superba” by 19th century Italian astronomer Father Angelo Secchi. A beautiful, deep red color can be seen which is attributed to the fact that this is one of the brightest and reddest of the carbon stars. Carbon stars are highly evolved cool red giants with atmospheres rich in carbon molecules that absorb the star’s blue and violet light, leaving the deep red color. Try viewing this star at various magnifications and at different times in its variable range. Does it look more red at various conditions? Some observers report that when carbon stars are dimmer the red color is even deeper.

La Superba - image by David Ritter, Wikipedia

Take your telescope out on a June evening and star-hop your way around the Herdsman and his dogs. You will not be disappointed in the variety of star systems you will discover among “the herd”.

Note: In the course of researching this article, I came across a great website resource about stars by James B. (Jim) Kaler, Professor Emeritus of Astronomy, University of Illinois.

http://stars.astro.illinois.edu/sow/sowlist.html.

The Queen Speaks

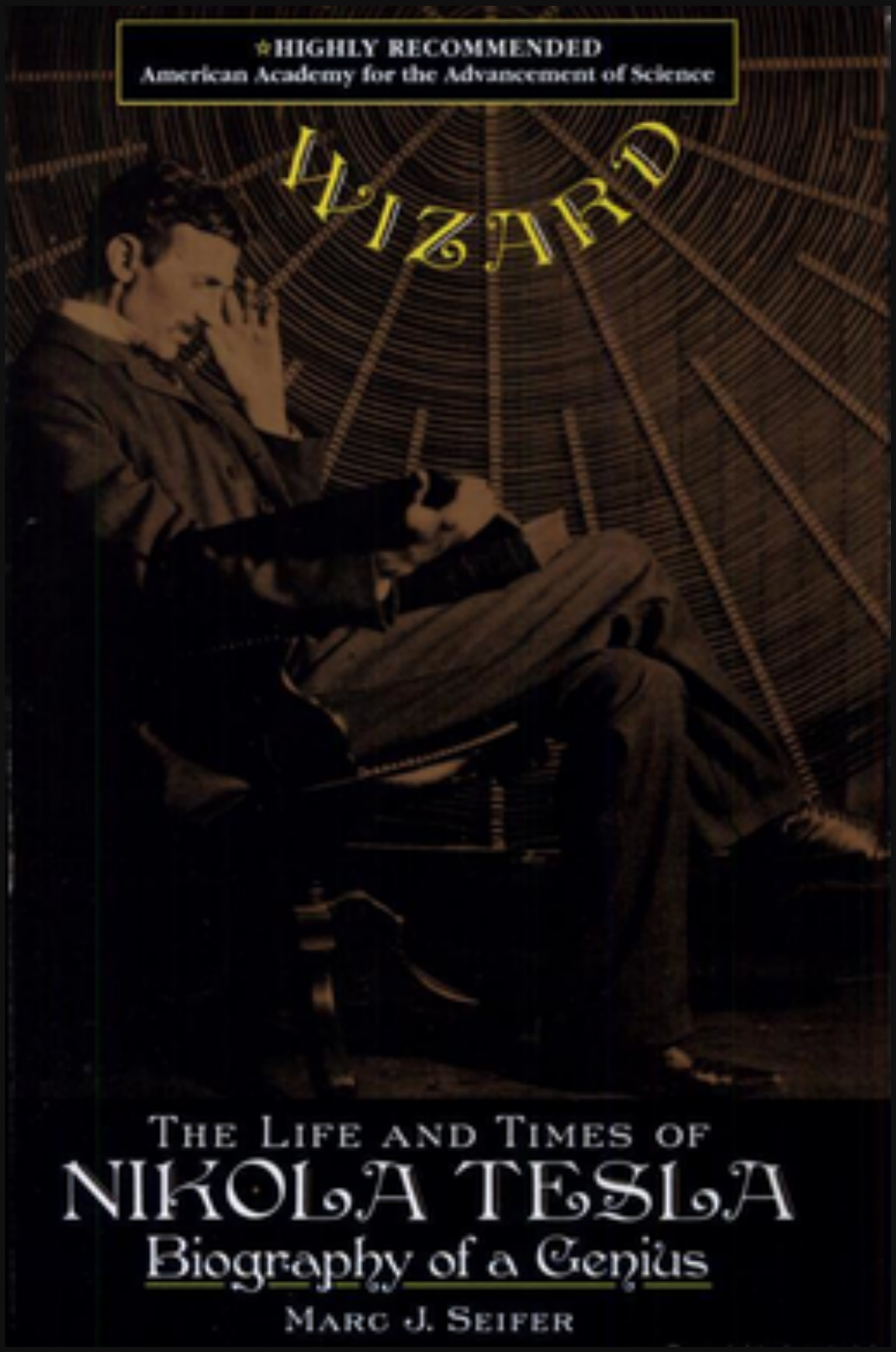
Robin Byrne

Book Review: Wizard

Nikola Tesla is a fascinating person, so when I came across the book Wizard: The Life and Times of Nikola Tesla Biography of a Genius by Marc J. Seifer, I figured it would be something I'd enjoy. I was wrong.

I should start by saying that there were parts that I found interesting. Seifer clearly researched Tesla's life quite a bit, including his correspondence with various people. So the parts of the book that dealt with the events in Tesla's life were fine and included many tidbits that were fun to read about.

Where my problems lie is with the author. I would have expected someone writing a biography of Tesla to either be in a field related to electronics or be a science historian. Seifer is neither. His degree is in psychology, specializing in handwriting analysis, which is a dubious area at best. He has no expertise in electricity, so no means to judge which of Tesla's claims were believable or not. He simply took everything Tesla said as truth.



Cover art of Wizard: The Life and Times of Nikola Tesla Biography of a Genius by Marc J. Seifer - image from the Citadel Press via Wikipedia

While he did acknowledge that there were many who questioned some of Tesla's ideas, Seifer made a point of finding at least one person who would stand behind Tesla's claims and use that single endorsement to validate all that Tesla said.

The other area where Seifer lost my respect was in the way he used the written correspondence to create scenes with quoted dialogue between Tesla and other people in his life. He in no way makes a disclaimer to say that the following dialogue is based on letters or other source material, but simply presents the reader with a scenario as though it actually occurred. And to add insult to injury, Seifer then embellishes these meetings with his own interpretation of what people were feeling or thinking. He essentially presented fictional stories as fact.

Seifer wrote this biography from the viewpoint of a total fan of Tesla's. I'm a fan, too, but I recognize that Tesla's early development of alternating current and other innovations by no means lend validity to his later, crazier ideas. Seifer believes it all and goes to extremes to convince the reader that Tesla's

“discoveries” actually were legitimate and would be in use today if not for all the people who worked so hard to keep Tesla down. Conspiracy theory much?

It is extremely rare that I don’t recommend a book, but this is one of those times. Don’t waste your money or your time on Wizard: The Life and Times of Nikola Tesla Biography of a Genius by Marc J. Seifer. There are much better Tesla biographies out there that are more deserving of your attention.

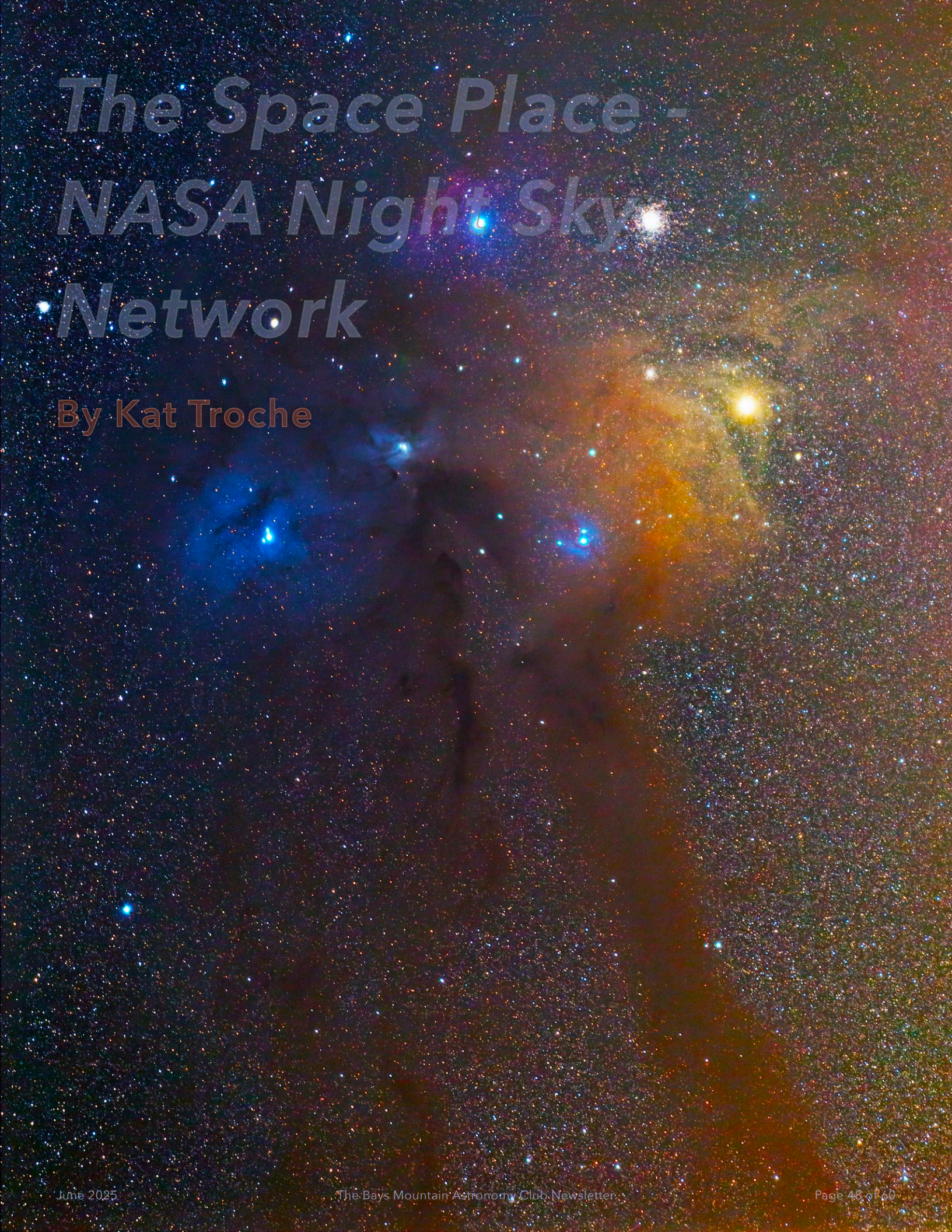
Reference:

Wizard: The Life and Times of Nikola Tesla Biography of a Genius by Marc J. Seifer; Citadel Press Kensington Publishing Corp. 1998

Editor Note: I found this article to be quite interesting and did some personal research on Goodreads. The 1 star review at the beginning of “Biography of a cultist who knows no physics” seemed to sum up Robin’s claims perfectly.

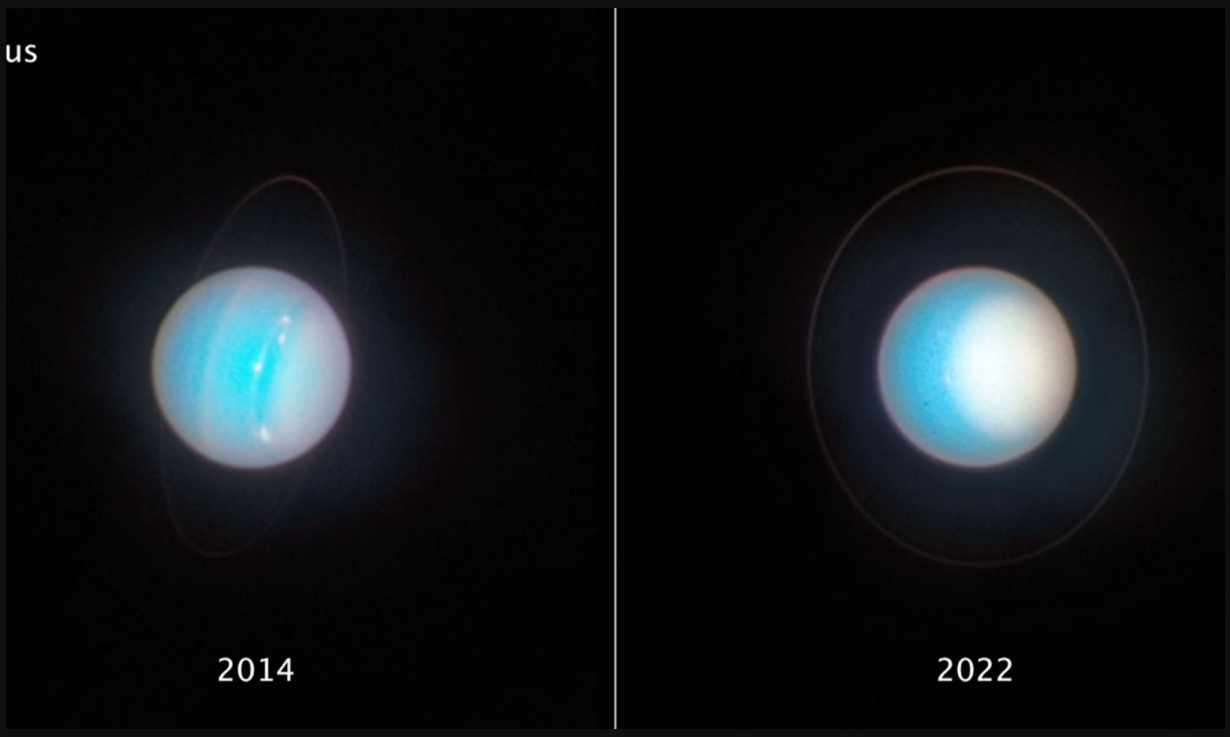
The Space Place - NASA Night Sky Network

By Kat Troche



Seasons of the Solar System

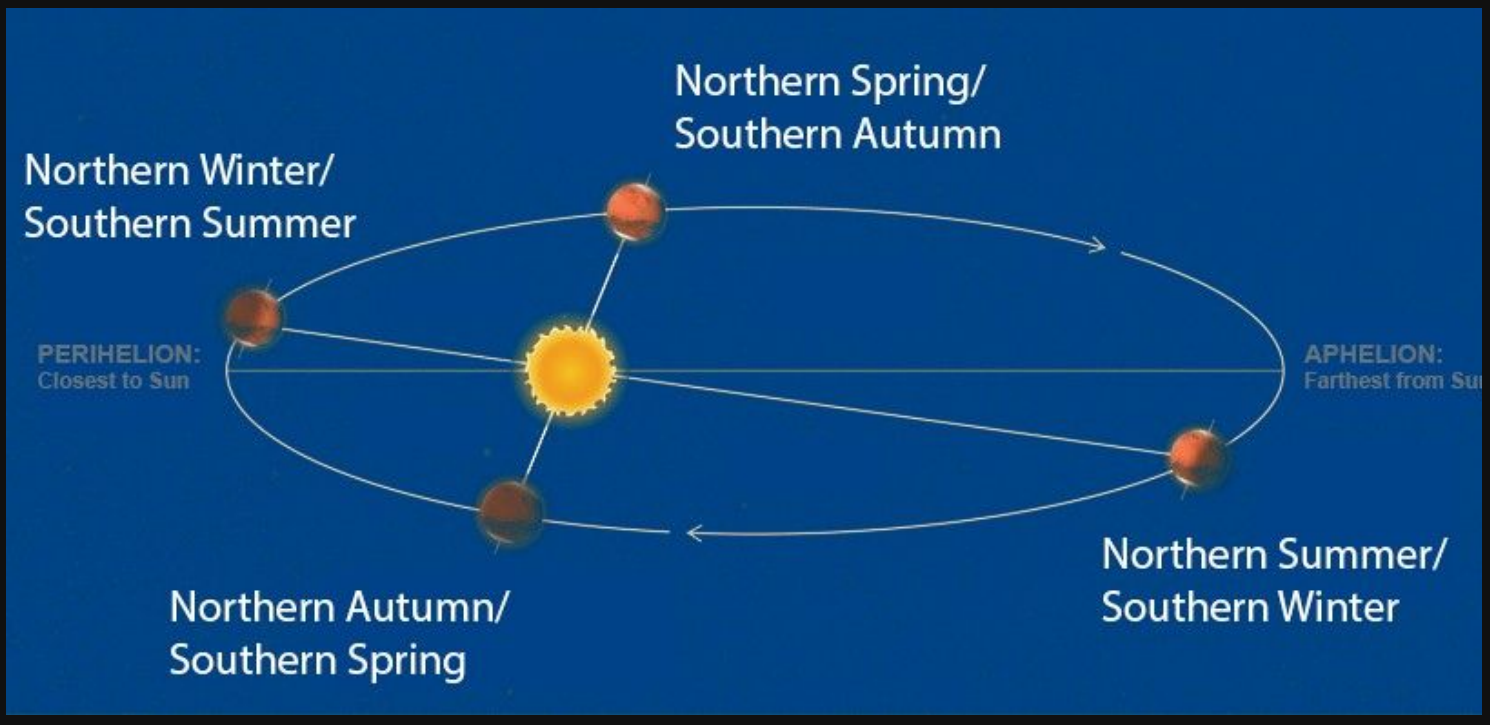
Here on Earth, we undergo a changing of seasons every three months. But what about the rest of the Solar System? What does a sunny day on Mars look like? How long would a winter on Neptune be? Let's take a tour of some other planets and ask ourselves what seasons might look like there.



Uranus rolls on its side with an 84-year orbit and a tilt just 8° off its orbital plane. Its odd tilt may be from a lost moon or giant impacts. Each pole gets 42 years of sunlight or darkness. Voyager 2 saw the south pole lit; now Hubble sees the north pole facing the Sun. Credit: NASA, ESA, STScI, Amy Simon (NASA-GSFC), Michael Wong (UC Berkeley); Image Processing: Joseph DePasquale (STScI)

Martian Autumn

Although Mars and Earth have nearly identical axial tilts, a year on Mars lasts 687 Earth days (nearly 2 Earth years) due to its average distance of 142 million miles from the Sun, making it late autumn on the red planet. This distance and a thin atmosphere make it less than perfect sweater weather. A recent weather report from Gale Crater boasted a high of -18 degrees Fahrenheit for the week of May 20, 2025.



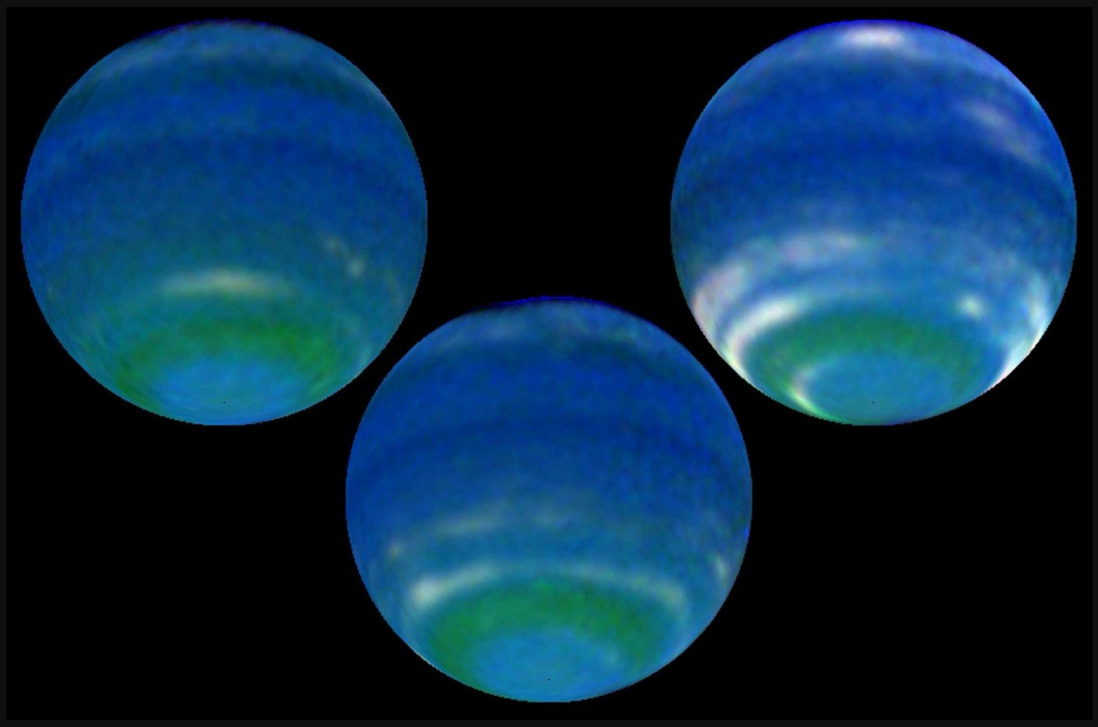
An artist's rendition of Mars' orbit around the Sun, and its seasons. Credit: NASA/JPL-Caltech

Seven Years of Summer

Saturn has a 27-degree tilt, very similar to the 25-degree tilt of Mars and the 23-degree tilt of Earth. But that is where the similarities end. With a 29-year orbit, a single season on the ringed planet lasts seven years. While we can't experience a **Saturnian season**, we can observe a **ring plane crossing** here on Earth instead. The most recent plane crossing took place in March 2025, allowing us to see Saturn's rings 'disappear' from view.

A Lifetime of Spring

Even further away from the Sun, each season on Neptune lasts over 40 years. Although changes are slower and less dramatic than on Earth, scientists have observed seasonal activity in Neptune's atmosphere. **These images** were taken between 1996 and 2002 with the Hubble Space Telescope, with brightness in the southern hemisphere indicating seasonal change.



NASA Hubble Space Telescope observations in August 2002 show that Neptune's brightness has increased significantly since 1996. The rise is due to an increase in the amount of clouds observed in the planet's southern hemisphere. Credit: NASA, L. Sromovsky, and P. Fry (University of Wisconsin-Madison)

As we welcome summer here on Earth, you can build a **Suntrack** model that helps demonstrate the path the Sun takes through the sky during the seasons. You can find even more fun activities and resources like this model on NASA's **Wavelength and Energy** activity.

This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit **nightsky** to find local clubs, events, and more!

BMAC Calendar & More

Calendar:

MAC Meetings:

- Friday, June 6, 2025 - 7p - Topic: “Getting Ready for the Next Galactic Supernova.” - **Location at the Farmstead**
- Friday, August 1, 2025 - 7p - Topic TBA.
- Friday, September 5, 2025 - 7p - Topic TBA.
- Friday, October 3, 2025 - 7p - Topic TBA.
- Friday, December 5, 2025 - 7p - Topic TBA.
- Friday, February 6, 2026 - 7p - Topic TBA.
- Friday, March 6, 2026 - 7p - Topic TBA.
- Friday, April 3, 2026 - 7p - Topic TBA
- Friday, June 1, 2026 - 7p - Topic: TBA

SunWatch:

- Every clear Saturday & Sunday - 3p-3:30p - March-October - By the Dam
  - View the Sun safely with a white-light view if clear.; Free.
  - You must have completed the Park Volunteer Program in order to help with the public program. If you have, and have been trained, please show up at least 30 minutes prior to the official start time.

StarWatch:

- Every Saturday in October and November - By the observatory
  - View the night sky with large telescopes at the observatories. If poor weather, an alternate live tour of the night sky will be held in the planetarium theater. Free.
  - You must have completed the Park Volunteer Program in order to help with the public program. If you have, and have been trained, please show up at least 30 minutes prior to the official start time.

Special Events:

- **Annual Club Picnic - July 2025**
  - Date and site location will be sent directly to full BMAC members. BMACers and their families are welcome to enjoy an evening of astronomy-themed games and activities along with a potluck dinner and observing.
- **StarFest 2025 - November 7-9, 2025**
  - Our 40th annual astronomy convention / star gathering for the Southeast United States. Three days of astronomy fun, 5 meals, 4 keynote speakers, unique T-shirt and more!
  - **Pre-registration by Oct. 16, 2025 with full payment is mandatory for attendance. Sorry, no walk-ins nor "visits."**
  - Link for all the StarFest info including registration and hotel reservation links.
- **BMAC Dinner - January 2026**
  - This event is for members and their families. Look for an e-mail in January with all the information.

Regular Contributors:

Greg Penner

Robin Byrne

Mackenzie Henley

Greg Penner is a semi-retired architect living in the Tri-Cities area since 2018. He has enjoyed astronomy since childhood when he received a “department store telescope” and viewed Saturn for the first time. He has been a member since 2018.

Robin Byrne has been writing the science history column since 1992 and was chair in 1997. She is an Associate Professor of Astronomy & Physics at Northeast State Community College (NSCC).

Mackenzie Henley is our new head editor of the Bays Mountain Astronomy Club newsletter. She is an undergraduate student at the University of Tennessee Knoxville.

Connection:

Bays Mountain Astronomy Club:

- 853 Bays Mountain Park Road; Kingsport, TN 37650
- (423) 229-9447 - **Park Site** - **Club Site**
- Newsletter edited by **Mackenzie Henley**

Dues:

- Dues are highly supplemented by the Bays Mountain Park Association and volunteerism by the club. As such, our dues are kept at an extremely low cost.
- $16 / person / year
- $6 / each additional family member
- Note: if you are a Park Member (which incurs a separate, additional fee), then a 50% reduction in BMAC dues are applied.
- Dues can be paid in many ways. The easiest way is to pay via the CivicRec online portal. If you are a current member, please log in with your e-mail address and reset your password if you have not already done so. You can then update your membership. Here's the direct **link**. If you want to add family members, then add them via the internal link. You can also pay at the gift shop, by mail or over the phone.

Chapter Background Image Credits:

- **Cover image of Southern Milky Way by Adam Thanz.**
  - *Sony A7ii with Zeiss Batis 2.8/18 lens, f/2.8, 8 sec., ISO 6,400, August 9, 2020.*
- **Table of Contents image of Comet NEOWISE (C/2020 F3) by Adam Thanz**
  - *Sony A7ii with Sony FE 2.8/90 Macro G OSS lens, f/2.8, 8 sec., ISO 4,000, July 15, 2020.*
- **Cosmic Reflections image of the Summer Triangle area of the Milky Way by William Troxel.**
  - *Image captured July 23, 2016.*
- **BMAC Notes painting of the Moon with moon glow by Christa Cartwright.**
  - *Painting based on a photograph of the Moon Christa captured July 2020.*
- **Stellar Observations image of Crescent Nebula by David Reagan.**
  - *This image was taken with a 140mm refractor in his suburban backyard using an AstroPhysics 900 mount, 8.7 hours of 5 minute Ha and OIII subexposures, combined in AstroPixelProcessor as an HOO image and processed in Lightroom and Photoshop. Image captured in 2022.*
- **The Queen Speaks image of a solar halo by Robin Byrne.**
  - *iPhone 7, June 8, 2020.*
- **The Space Place - NASA Night Sky Network image of the Rho Ophiuchi cloud complex by Brandon Stroupe.**
  - *Canon 6D with Canon 2.8/70-200mm lens, f/2.8 @200mm, 20 x 120 sec. exposures, ISO 1,000, stacked in Deepsky Stacker, processed in Adobe Photoshop CC, Skywatcher Star Adventure mount, September 19, 2015.*
- **BMAC Calendar & More image of the Moon by Greg Penner.**
  - *iPhone shooting through a 9mm eyepiece and 12.5" Truss Tube Dobsonian @212x.*
- **All background images used with permission by their authors.**