The Astrogator

Grand Strand Astronomers Club Newsletter

Volume #4, Issue #5
July 1, 2026

Contents

Grand Strand Astronomers Leadership

Ian Hewitt – Executive Officer
John DeFreitas – Treasurer
Gerald Drake – Secretary
Tim Kelly – Newsletter Co-Editor

Club Announcements

Club Social Media

Grand Strand Astronomers:
https://www.gsastro.org/

Grand Strand Amateur Astronomy Club:
https://www.facebook.com/groups/gsatro/

Upcoming Club Events

- **Hampton Dark Sky Observing: July 11, 2026**
- **Indoor Zoom Meeting: July 23, 2026**

Dark sky observing session at Hampton State Historic Site starting time is 8:00pm – 11:00 pm.

Our regularly scheduled indoor meeting of the Grand Strand Astronomers is held online. Starting time is 7:00 PM. Check for Zoom meeting link on our Facebook page.

Membership

Our membership runs from January to December of each year, so now it is time to pay dues for 2026. Membership in the Grand Strand Astronomers is only $25.00 per year. Part of this goes toward your Astronomical League's membership and Reflector Magazine. The rest goes toward our minimal operating expenses. So, please rejoin if you haven't already. You can pay online by going to https://www.gsastro.org/joinrenew/.

As of June 2026, we have 21 dues paying members.

You can also mail in a check to:

Grand Strand Astronomers
1771 Alford Rd
Conway, SC 29526.

New Members

Grand Strand Astronomers would like to welcome the following individuals as new members;

Olivia Flowerday
Adrianne Bostic
Richard Hawley
Edwin Sanders

July Meeting Recap

By: Gerald Drake

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

The meeting was opened by Ian via Zoom at 7:00 PM. It was lightly attended. Ian noted that a lot of our members are traveling this Summer. Ian welcomed everyone and asked if anyone had anything to share. Gerald shared that he looked up the YouTube meeting where Ian and Chris explained some basics for imaging. Gerald shared that video link with the club because it answered a lot of questions he was struggling with.

The skies have been pretty cloudy lately, so observing has been difficult. Tim shared that he saw Mars around midnight the other evening. Pretty cool. Looks like clouds will be around next week. Ian will explore holding an in- person meeting at Carolina Forrest High School. The teacher who attended last month's meeting and suggested this as an option has joined our club so Ian will get up with him and see what can be arranged. He will work on getting a good guest speaker for this meeting. For in-person meetings, we plan to include a Zoom option for those who cannot attend at the location.

We discussed holding meetings at a coffee shop or similar location that has conference rooms, but this could be difficult to arrange if the place is crowded. Ian is also working with a Montessori school in Pawleys Island to hold events at their location. They have a nice field, and the skies are fairly dark there.

We are planning to hold a public event in coordination with Coastal Carolina University in the Fall. It was determined that the month of October would be a good time for the event because the weather is still mild and it gets dark earlier. CCU can supply the telescopes and manpower to set them up, but our club will be needed to help the public with observing with them. CCU has an inflatable planetarium that they will set up. They've used this at Brookgreen Garden with great success. Celestial events would be of interest to the public.

While Jupiter has disappeared from the night sky, Saturn will appear in the middle of September. It is an impressive target for public observing. Mars will not be visible in the evening until February of 2027. Ian would also like to time the outing so that there is at least a quarter moon. This gives us something to observe even if there are clouds.

Next, we discussed Stellarium landscapes that can be added so you can plan your observing around the actual horizon you'll see; i.e.; tree lines and other obstructions. Ian has set one up for our Hampton Plantation observing area. He did this by recording a panorama and embedding the file into the Stellarium horizon. He wants to do this for our other observing locations. He will do one for the Montessori school in Pawleys Island and suggested Gerald could do one for Playcard Environmental Learning Center in Loris.

For club business, Ian announced that we have an IT issue that is making it difficult to access the club's hosting account. No data has been compromised, just an issue of limited access. Receipt of payments for dues could be impacted. We are working to get this resolved quickly.

Be patient if you've used the contact form on our website. Thousands of requests have been filtered out that are mostly robots selling something. Better to email the club directly at info@gastro.org.

Tim suggested including the officer's email address in the club newsletter. Ian thought that was a good idea but wanted to wait until we get the hosting account issue resolved.

We have a Facebook page for the club that has been somewhat idle. We now have a person who is taking that over and will manage and improve it as needed. Ian will send his contact info by email so that you can share with him any suggestions you have for improving our Facebook page. Tim shared that T Coronae Borealis, T CrB, may go nova soon. See his article on this in the newsletter. Ian gave a good explanation on how this white dwarf will collapse into a neutron star. When this happens, you'll be able to see it with the naked eye between the stars Arcturus and Vega in the constellation Corona Borealis. Right now, it is dim. Ian said that Stellarium has a selection for dimmer stars that can help you locate them.

We have had some pretty cloudy evenings, but if we get a clear night, we might have an impromptu

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

observing session. Watch for an email on this.

Mosquitoes are bad in our area at this time of year. For any observing session, bring repellent or proper covering to prevent getting ate up. We discussed Fuel Powered Mosquito Repellants that put up a vapor barrier around you. These work as long as there is no wind. Bug zappers also work. Tim demonstrated his Mosquito Zapper which is a 2-in-1 Charge and Go Zapper with Accent Light. The unit is charged using a mico USB charger. A supplied PIC Mosquito Octenol lure packet (of one) is placed in the top of the zapper. It is called a zapper because it uses a small zapper grid to kill the mosquitoes. Tim has only tried it inside his screen in-porch. The real test will be outside in the field of the enemy.

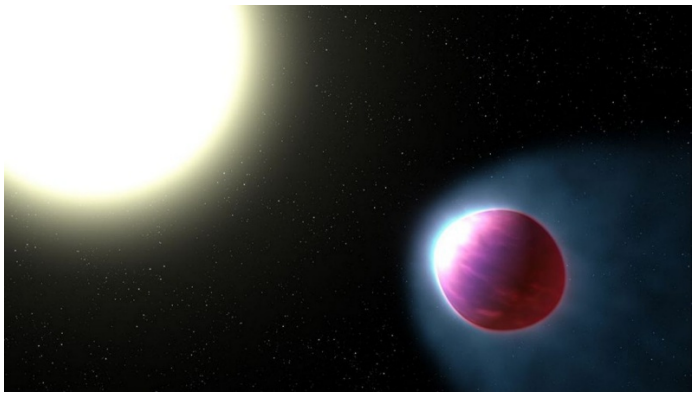
If you are not receiving your copy of the Reflector magazine, please let us know at info@gasastro.org. This is a quarterly publication from the Astronomical League. Part of your club's dues goes to the publication of this magazine.

With no further discussion, the meeting was adjourned.

Exoplanet That Rains Rubies and Sapphires

By: Sharmila Kuthunur
Submitted by: Tim Kelly

"With its unprecedented observational quality, JWST gives us the most detailed glimpses into distant planets to date."



This is an artist's impression of the gas giant exoplanet WASP-121b. The bloated planet is so close to its star that the tidal pull of the star stretches it into an egg shape. (Image credit: NASA, ESA, and G. Bacon (STSci))

Imagine a world where the weather forecast calls for winds blowing at 11,000 miles per hour (18,000 kilometers per hour) and nighttime showers of liquid metal, rubies and sapphires.

This is the chaotic reality astronomers have pieced together for WASP-121b, an "ultra-hot Jupiter" that ranks among the most extreme planets known beyond the solar system.

The gas giant orbits its host star at such a punishingly close distance that a single "year" there lasts just 30.5 hours. At that proximity — so close that if it got any closer, stellar gravity would start ripping it apart — the host star's immense tidal forces have warped the planet from a sphere into a football-like shape. Temperatures on its dayside climb high enough to vaporize metals, while previous studies have suggested that iron may condense and fall as rain on the cooler nightside. Now, astronomers using

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

the James Webb Space Telescope (JWST) have added another piece to the world's meteorological portrait.

By tracking subtle changes in starlight passing through WASP-121 b's atmosphere as the planet crossed in front of its star, researchers detected differences between atmospheric conditions at dawn and dusk, according to the study.

"With its unprecedented observational quality, JWST gives us the most detailed glimpses into distant planets to date," study lead author Cyril Gapp of the Max Planck Institute for Astronomy in Germany, said in a statement.

By measuring how star light absorption changes as WASP-121 b rotates, we probe its atmosphere longitude by longitude," Gapp said.

The observations suggest that the planet's evening terminator — the region rotating out of daylight — is hotter than its morning counterpart. The finding is consistent with powerful winds transporting heat from the planet's intensely hot dayside toward its cooler nightside, researchers say.
Because WASP-121 b is tidally locked to its star, one hemisphere permanently faces the star while the other remains in darkness. Yet, during a transit, the planet rotates just enough from JWST's vantage point for different regions of its atmosphere to come into view.

By examining how the atmospheric signal changed over time, Gapp and his team found that the evening side absorbed slightly more starlight than the morning side, the study reports. The researchers also detected changes in signals associated with water vapor and carbon monoxide, which they interpret as evidence of temperature differences across the atmosphere.

The hotter evening side appears warm enough to break apart water molecules in the upper atmosphere, the study notes. The cooler morning side, meanwhile, may be partially obscured by clouds made of silicate minerals, although the study notes more sophisticated models will be needed to determine whether such clouds are indeed present.

Planets Visible on July 15th in Myrtle beach, SC

Planet Visibility & Viewing Times

Here are the planets visible in Myrtle Beach, SC on July 15, 2026. This chart shows when each planet rises, when it's highest in the sky, when it sets, and how bright it appears from Earth — so you can decide the best time to look. Visibility also depends on weather conditions and how clear your local sky is.

Mercury	6:13 A.M. E	1:01 P.M. 73°	7:50 P.M. W	3.4	⚠ Faint
Venus	9:47 A.M. E	4:17 P.M. 66°	10:47 P.M. W	4.1	Brilliant
Mars	3:18 A.M. NE	10:24 A.M. 78°	5:29 P.M. NW	1.3	✨ Very Bright
Jupiter	7:07 A.M. NE	2:05 P.M. 76°	9:03 P.M. NW	1.6	Brillant
Saturn	12:29 A.M. E	6:41 A.M. 59°	12:52 P.M. W	0.7	✨ Very Bright
Uranus	2:51 A.M. NE	9:52 A.M. 77°	4:53 P.M. NW	5.8	X Binoculars
Neptune	11:54 P.M. E	6:01 A.M. 56°	12:04 P.M. W	7.9	Telescope

- Highest in the Sky – When it reaches its highest point overhead (usually the best time to view).
- Sets – When it drops below the horizon.
- Magnitude – A number showing how bright the planet appears from Earth (lower numbers mean brighter and easier to see).

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

- Brightness – A simple rating that tells you how easy the planet may be to be spotted on your horizon

For the best view, look when a planet is high in the sky and the Sun has fully set.

All times shown are local Myrtle Beach time for selected location

One of the Sky's Rarest Phenomena is back: How to see Rare Night-Shining Clouds this Summer

By: Anthony Wood
Submitted by: Tim Kelly

Night shining noctilucent clouds could brighten the sky before dawn and after sunset from tonight!

When and where to look

Rare noctilucent clouds shine above the city of Kennewick in Washington State June 2. (Image credit: John Clement.)

Noctilucent cloud season has officially begun!

One of the earliest sightings was captured by photographer John Clement, glowing in the skies over the city of Kennewick, Washington, on June 2, who had set out to capture a striking conjunction of Venus and Jupiter, which had occurred earlier that evening.

"As Twilight deepened, I began to notice the possible noctilucents starting to become visible over Badger Mtn. as we call it, A popular hiking hill about a mile from my house," Clement told Space.com in an email. "So at 9:58 I turned my camera towards Badger and took the first set of images, and it confirmed they were noctilucent."

The three-shot panorama was captured using an Olympus OM-D E-M1 Mark III camera coupled with a 150 mm lens set to capture a series of bracketed 1-second exposures as the clouds shone in the skies above Clement's patio in southwest Kennewick.

Astronomy enthusiast Daniel Fischer also posted a view of noctilucent clouds to the social media site, showing the rare cloud formation shining above the town of Flensburg in a livestream on May 31.

Night sky tonight — What you can see tonight

What's that bright light after sunset? Venus is dazzling the evening sky right now

Noctilucent clouds coalesce from tiny ice water crystals that accumulate in the mesosphere 50 miles (80 kilometres) above Earth's surface — roughly 10 times the height of ordinary cirrus and cloud formations.

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

Their extreme altitude near the edge of space allows them to catch and reflect sunlight long after sunset and before dawn, when the sun lurks just below the horizon from the viewer's perspective. As a result, they shine brightly against the twilight sky, where other clouds in the lower atmosphere appear dark, according to NASA.

Once-in-a-Lifetime Explosion

By: Anthony Wood
Submitted by: Tim Kelly

T. Coronae Borealis undergoes a dramatic nova explosion once every 80 years on average, causing it to shine as bright as Polaris, the North Star.

Illustration of T Coronae Borealis, two stars that orbit each other: a red giant nearing the end of its life and an Earth-sized stellar remnant known as a white dwarf. (Image credit: NASA's Goddard Space Flight Center Conceptual Image Lab)

A once-in-a-lifetime stellar eruption could occur at any time, potentially causing a 'new star' to appear in the night sky. If it does, the star system T Coronae Borealis could suddenly brighten to rival Polaris, the North Star. Here's what you need to know about the "Blaze Star" T. Coronae Borealis (T CrB).

T CrB is a prime example of a recurring nova. This thermonuclear explosion erupts from the atmosphere of a white dwarf star roughly once every 80 years, when it reaches a point of critical mass, having stripped vast quantities of material from a co-orbiting red giant.

After each eruption, the white dwarf returns to vampirically feeding on its companion star, until ready to start the process anew. Recurring novas like T CrB are extremely rare, with only five known to exist within the entirety of the Milky Way, according to NASA.

When will T. Coronae Borealis erupt?

T CrB brightens roughly once every 80 years — an average based on eight centuries of historical observations. The most recent deluge of nova light reached Earth in 1946, prompting some astronomers to predict that the next brightening could occur as early as February 2024, based on an earlier dip in the system's light that echoed historical data.

It seems that T CrB had other ideas, however, and instead has remained stubbornly dim through numerous unsuccessful prediction attempts. Astronomers repeatedly attempted to fit subtle shifts in the brightness of T CrB to the few points of reliable historical data on offer, while accounting for fluctuations in the white dwarf's feeding rate.

"We know it has to happen," astrophysicist Elizabeth Hays, project scientist on NASA's Fermi gamma-ray space telescope, told Space.com in 2024. "We just can't pin it down to the month."

One paper authored by Jean Schneider of the Paris Observatory put forward a set of four potential dates for the brightening — the last of which falls on June 25, 2026 — based on the presence of a theoretical third body in the T CrB system. However, other astronomers were skeptical of the predictions, as no evidence of this phantom third body has been spotted in modern data.

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

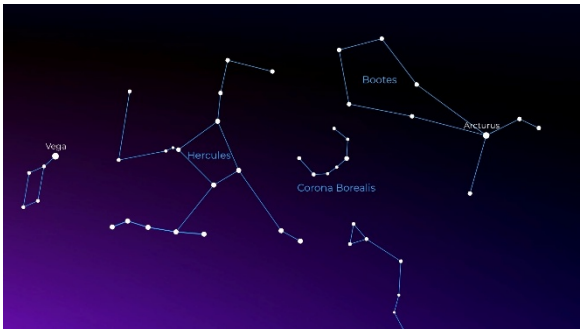
What should I expect?

Each nova explosion triggers a dramatic surge in T CrB's apparent brightness, as radiation cast out in the cataclysmic event finally reaches us, having spent approximately 3,000 years racing through the near-perfect vacuum of space.

T CrB is usually far too dim to see with the naked eye, shining as it does with an average brightness, or magnitude, or just +10. Magnitude is the scale used by astronomers to track the apparent brightness of objects in the night sky. The lower the number, the brighter the object, with the human eye capable of spotting targets down to a magnitude of +6 from a dark sky location.

During a nova surge, T CrB can jump from +10 to a magnitude of +2, making it easily visible to the naked eye as it shines with a brilliance comparable to that of the North Star, Polaris.

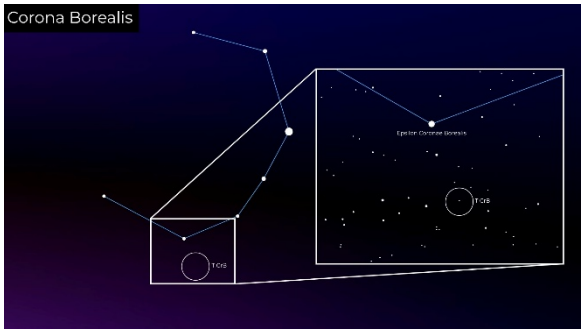
T CrB shines close to the semicircle of stars of the lesser-known constellation Corona Borealis, also known as the Northern Crown, which can be found glowing brightly overhead between the constellations of Bootes and Hercules after sunset in early summer.



How to find Corona Borealis in the summer sky. (Image credit: Created by Anthony Wood in Canva)

You'll need a pair of 10x50 binoculars or a small telescope to find the Blaze Star before it brightens to naked eye visibility. First, locate the magnitude 4.28 star Epsilon Coronae Borealis, which is the second star in from the left of the semicircular formation, as viewed from the Northern Hemisphere.

Next, sweep your scope over the patch of sky one degree to the lower right of Epsilon Coronae Borealis — roughly the width of your little finger held at arm's length — to find the patch of sky containing T CrB.



Finding T. Coronae Borealis in the constellation Corona Borealis. (Image credit: Created by Anthony Wood in Canva)

How long will T CrB be visible for?

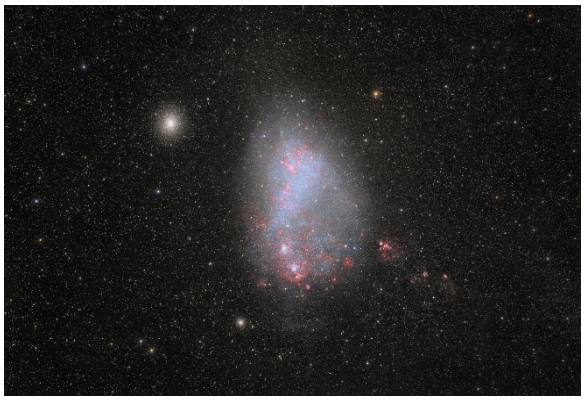
Once the Blaze Star erupts, its nova light should remain visible to the naked eye for a little under a week, according to NASA, though you'll be able to follow its progress for longer using a pair of binoculars! You can also keep an eye on T CrB's brightness via the American Association of Variable Star Observers (AAVSO) website, which allows you to plot a light curve for the distant star system based on recent member observations.

Backyard Snapshot Delivers Stunning Galaxy Image

By Chelsea Gohd
Submitted by: Tim Kelly

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

The Small Magellanic Cloud stuns in this ambassador's picture.



This image of the Small Magellanic Cloud was captured with a camera and a wide-aperture telephoto lens from a mountain in Chile. (Image credit: NOIRLab/NSF/AURA/P. Horálek (Institute of Physics in Opava))

The Small Magellanic Cloud (SMC) looks spectacular in a new snapshot. But something about it might really surprise you.

It looks like this detailed image of a far-off galaxy was captured an advanced space telescope, or a huge ground-based scope. However, it was actually snapped with a camera sporting a telephoto lens from right here on Earth.

What is it?

The SMC is a dwarf galaxy that holds hundreds of millions of stars. The galaxy is near our very own Milky Way; in fact, it's one of our closest neighbors. Still, it is nearly 200,000 light-years away.

Despite that distance, the SMC can be seen with the naked eye from the Southern Hemisphere.

This unique visibility may have played a role in this spectacular image, which was captured by Petr Horálek, a NOIRLab Audiovisual Ambassador, using a camera and a wide-aperture telephoto lens on the mountain Cerro Pachón in Chile. This image capture took four hours under the dark skies above the mountain.

Hubble spies a swarm of stars in a strange, irregular galaxy | Space photo of the day for June 15, 2026

Triangulum Galaxy dazzles in psychedelic color | Space photo of the day for March 23, 2026

The Whirlpool Galaxy comes alive | Space photo of the day for May 13, 2026

The Astrogator
Grand Strand Astronomers Club Newsletter

Volume #4, Issue #5
July 1, 2026

Why is it incredible?

In looking at this photo, you might assume it was captured by a space telescope like Hubble. It's a detailed and striking view of this far-off galaxy.

But Horálek captured this image with just a camera and telephoto lens. NOIRLab's ambassador program is a joint venture with the Vera C. Rubin Observatory, and ambassadors share science with the public and their local communities.

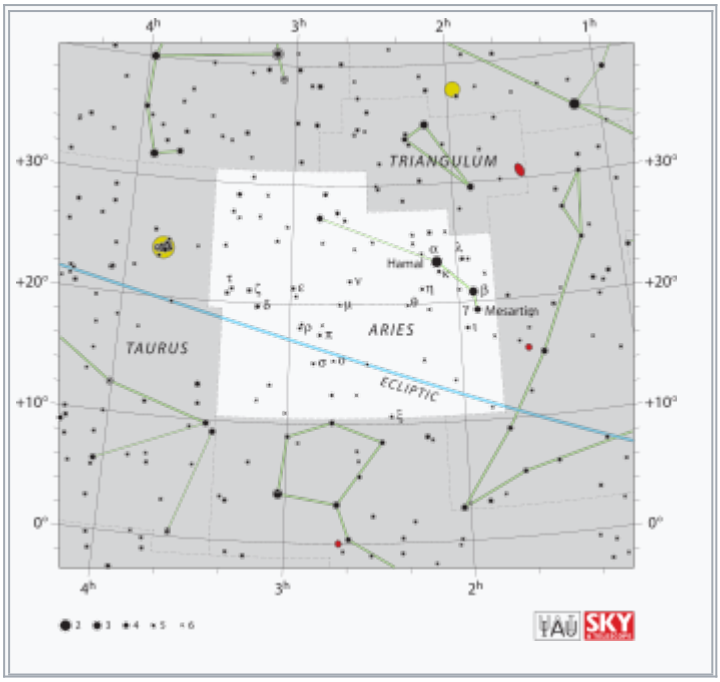
This image is beautiful, but it also represents an exciting achievement in astrophotography.

Aries: this Month's Constellation

Wikipedia
Submitted by: Tim Kelly

Coordinates: 03h 00m 00s, +20° 00′ 00″

Not to be confused with Ares, the Greek god of war.



List of stars in Aries	
Abbreviation	Ari[1]
Genitive	Arietis
Pronunciation	/ˈɛəriːz/ ⓘ, genitive /əˈraɪətəs/, /ˌæriˈɛtəs/
Symbolism	the Ram
Right ascension	01h 46m 37.3761s–03h 29m 42.4003s[2]
Declination	31.2213154°–10.3632069°[2]
Area	441[3] sq. deg. (39th)
Main stars	4, 9
Bayer/Flamsteed stars	61
Stars brighter than 3.00m	2
Stars within 10.00 pc (32.62 ly)	2[a]
Brightest star	Hamal (α Ari) (2.00m)
Nearest star	Teegarden's Star[4]:84
Messier objects	0
Meteor showers	• May Arietids • Autumn Arietids • Delta Arietids

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

	• Epsilon Arietids • Daytime-Arietids • Aries-Triangulids
Bordering constellations	• Perseus • Triangulum • Pisces • Cetus • Taurus[3]

Aries is one of the constellations of the zodiac. It is located in the Northern celestial hemisphere between Pisces to the west and Taurus to the east. The name Aries is Latin for ram. Its traditional astrological symbol is ♈ (♈). It is one of the 48 constellations described by the 2nd century astronomer Ptolemy, and remains one of the 88 modern constellations. It is a mid-sized constellation ranking 39th in overall size, with an area of 441 square degrees (1.1% of the celestial sphere).

Aries has represented a ram since late Babylonian times. Before that, the stars of Aries formed a farmhand. Different cultures have incorporated the stars of Aries into different constellations including twin inspectors in China and a porpoise in the Marshall Islands. Aries is a relatively dim constellation, possessing only four bright stars: Hamal (Alpha Arietis, second magnitude), Sheratan (Beta Arietis, third magnitude), Mesarthim (Gamma Arietis, fourth magnitude), and 41 Arietis (also fourth magnitude). The few deep-sky objects within the constellation are quite faint and include several pairs of interacting galaxies. Several meteor showers appear to radiate from Aries, including the Daytime Arietids and the Epsilon Arietids.

History and mythology

Aries is now recognized as an official constellation, albeit as a specific region of the sky, by the International Astronomical Union. It was originally defined in ancient texts as a specific pattern of stars, and has remained a constellation since ancient times; it now includes the ancient pattern and the surrounding stars.[5] In the description of the Babylonian zodiac given in the clay tablets known as the MUL.APIN, the constellation, now known as Aries, was the final station along the ecliptic. The MUL.APIN was a comprehensive table of the rising and settings of stars, which likely served as an agricultural calendar. Modern-day Aries was known as ^{MUL}*LÚ.ḪUN.GÁ*, "The Agrarian Worker" or "The Hired Man".[6] Although likely compiled in the 12th or 11th century BC, the MUL.APIN reflects a tradition that marks the Pleiades as the vernal equinox, which was the case with some precision at the beginning of the Middle Bronze Age. The earliest identifiable reference to Aries as a distinct constellation comes from the boundary stones that date from 1350 to 1000 BC. On several boundary stones, a zodiacal ram figure is distinct from the other characters. The shift in identification from the constellation as the Agrarian Worker to the Ram likely occurred in later Babylonian tradition because of its growing association with Dumuzi the Shepherd. By the time the MUL.APIN was created—in 1000 BC—modern Aries was identified with both Dumuzi's ram and a hired labourer. The exact timing of this shift is difficult to determine due to the lack of images of Aries or other ram figures.[7]

In ancient Egyptian astronomy, Aries was associated with the god Amun-Ra, who was depicted as a man with a ram's head and represented fertility and creativity. Because it was the location of the vernal equinox, it was called the "Indicator of the Reborn Sun".[8] During the times of the year when Aries was prominent, priests would process statues of Amon-Ra to temples, a practice that was modified by Persian

astronomers centuries later. Aries acquired the title of "Lord of the Head" in Egypt, referring to its symbolic and mythological importance.[9]

Aries and Musca Borealis as depicted in *Urania's Mirror*, a set of constellation cards published in London c. 1825

Aries depicted in an early medieval manuscript, c. 1000

Aries was not fully accepted as a constellation until classical times.[10] In Hellenistic astrology, the constellation of Aries is associated with the golden ram of Greek mythology that rescued Phrixus and Helle on orders from Hermes, taking Phrixus to the land of Colchis.[11][12][13] Phrixus and Helle were the son and daughter of King Athamas and his first wife Nephele. The king's second wife, Ino, was jealous and wished to kill his children. To accomplish this, she induced famine in Boeotia, then falsified a message from the Oracle of Delphi that said Phrixus must be sacrificed to end the famine. Athamas was about to sacrifice his son atop Mount Laphystium when Aries, sent by Nephele, arrived.[14] Helle fell off of Aries's back in flight and drowned in the Dardanelles, also called the Hellespont in her honour.[3][11][13]

Historically, Aries has been depicted as a crouched, wingless ram with its head turned towards Taurus. Ptolemy asserted in his *Almagest* that Hipparchus depicted Alpha Arietis as the ram's muzzle, though Ptolemy did not include it in his constellation figure. Instead, it was listed as an "unformed star", and denoted as "the star over the head". John Flamsteed, in his *Atlas Coelestis*, followed Ptolemy's description by mapping it above the figure's head.[14][15] Flamsteed followed the general convention of maps by depicting Aries lying down.[8] Astrologically, Aries has been associated with the head and its humors.[16] It was strongly associated with Mars, both the planet and the god. It was considered to govern Western Europe and Syria and to indicate a strong temper in a person.[17]

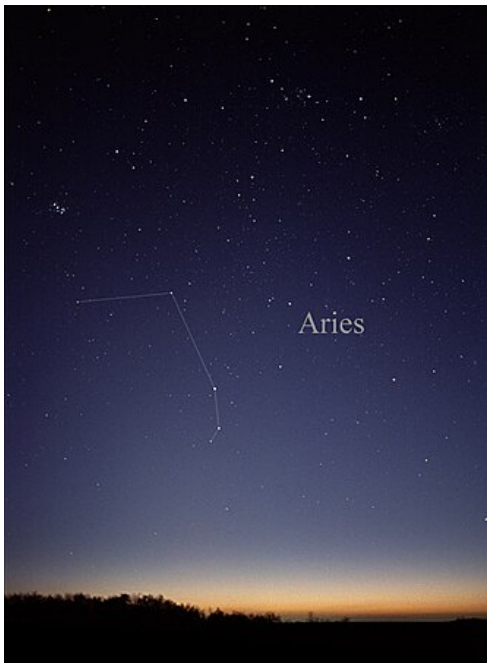
The First Point of Aries, the location of the vernal equinox, is named for the constellation. This is because the Sun crossed the celestial equator from south to north in Aries more than two millennia ago. Hipparchus defined it in 130 BC. as a point south of Gamma Arietis. Because of the precession of the equinoxes, the First Point of Aries has since moved into Pisces and will move into Aquarius by around 2600 AD. The Sun now appears in Aries from late April through mid-May, though the constellation is still associated with the beginning of spring.[12][14][18]

Medieval Muslim astronomers depicted Aries in various ways. Astronomers like al-Sufi saw the constellation as a ram, modelled on the precedent of Ptolemy. However, some Islamic celestial globes

depicted Aries as a nondescript four-legged animal with what may be antlers instead of horns.[19] Some early Bedouin observers saw a ram elsewhere in the sky; this constellation featured the Pleiades as the ram's tail.[20] The generally accepted Arabic formation of Aries consisted of thirteen stars in a figure along with five "unformed" stars, four of which were over the animal's hindquarters and one of which was the disputed star over Aries's head.[21] Al-Sufi's depiction differed from both other Arab astronomers' and Flamsteed's, in that his Aries was running and looking behind itself.[8]

The obsolete constellations Apes, Vespa, Lilium, and Musca Borealis all centred on the same four stars, now known as 33, 35, 39, and 41 Arietis.[22] In 1612, Petrus Plancius introduced Apes, a constellation representing a bee. In 1624, the same stars were used by Jakob Bartsch for Vespa, representing a wasp. In 1679, Augustin Royer used these stars for his constellation Lilium, representing the fleur-de-lis. None of these constellations became widely accepted. Johann Hevelius renamed the constellation "Musca" in 1690 in his *Firmamentum Sobiescianum*. To differentiate it from Musca, the southern fly, it was later renamed Musca Borealis but it did not gain acceptance and its stars were ultimately officially reabsorbed into Aries.[22]

In 1922, the International Astronomical Union defined its recommended three-letter abbreviation "Ari".[1] The official boundaries of Aries were defined in 1930 by Eugène Delporte as a polygon of 12 segments. Its right ascension is between $1^h\ 46.4^m$ and $3^h\ 29.4^m$ and its declination is between 10.36° and 31.22° in the equatorial coordinate system.[23]



The constellation Aries as it can be seen with the naked eye

Stars

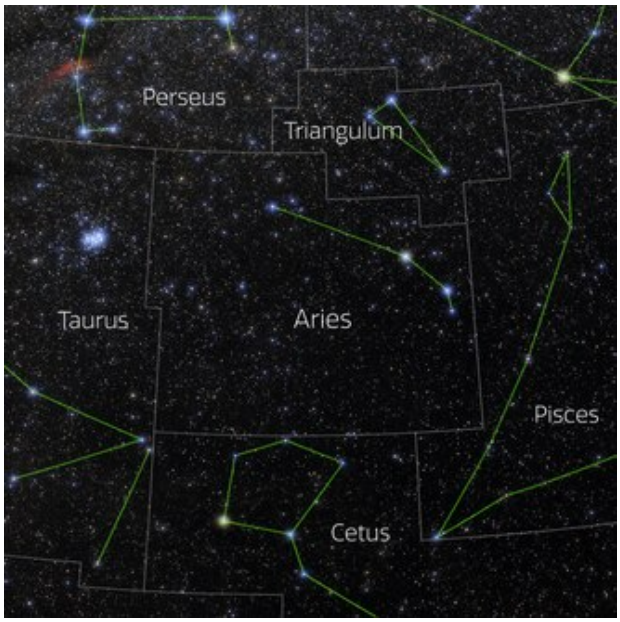
Further information: List of stars in Aries

Bayer gave the most prominent stars Bayer designations Alpha through Tau. Later designated three stars as Rho and two stars as Gamma, Theta, and Tau. Theta^2 Arietis was dropped because it felt it was too dim, leaving Theta^1 as the sole Theta. c Arietis was included in some atlases which is the star c Muscae Borealis in the obsolete constellation Musca Borealis, which is now an asterism.[26]

Bright stars

Aries has three prominent stars forming an asterism, designated Alpha, Beta, and Gamma Arietis by Johann Bayer. Alpha (Hamal) and Beta (Sheratan) are commonly used for navigation.[27] There is also one other star above the fourth magnitude, 41 Arietis (Bharani[28]). α Arietis, called Hamal, is the brightest star in Aries. Its traditional name is derived

from the Arabic word for "lamb" or "head of the ram" (*ras al-hamal*), which references Aries's mythological background.[18] With a spectral class of K2[13] and a luminosity class of III, it is an orange giant with an apparent visual magnitude of 2.00, which lies 66 light-years from Earth.[12][29] Hamal has a luminosity of 96 $L_\odot$ and its absolute magnitude is −0.1.[30]



The constellation Aries showing the IAU boundaries, the constellation stick figure, and labels for its brightest stars. Astrophotograph by Eckhard Slawik, from NOIRLab's 88 Constellations project.

β Arietis, also known as Sheratan, is a blue-white star with an apparent visual magnitude of 2.64. Its traditional name is derived from "*sharatayn*", the Arabic word for "the two signs", referring to both Beta and Gamma Arietis in their position as heralds of the vernal equinox. The two stars were known to the Bedouin as "*qarna al-hamal*", "horns of the ram".[31] It is 59 light-years from Earth.[32] It has a luminosity of 11 $L_\odot$ and its absolute magnitude is 2.1.[30] It is a spectroscopic binary star, one in which the companion star is only known through analysis of the spectra.[33] The spectral class of the primary is A5.[13] Hermann Carl Vogel determined that Sheratan was a spectroscopic binary in 1903; its orbit was determined by Hans Ludendorff in 1907. It has since been studied for its eccentric orbit.[33]

γ Arietis, with a common name of Mesarthim, is a binary star with two white-hued components, located in a rich field of magnitude 8–12 stars. Its traditional name has conflicting derivations. It may be derived from a corruption of "al-sharatan", the Arabic word meaning "pair" or a word for "fat ram".[14][18][34] However, it may also come from the Sanskrit for "first star of Aries" or the Hebrew for "ministerial servants", both of which are unusual languages of origin for star names.[18] Along with Beta Arietis, it was known to the Bedouin as "*qarna al-hamal*".[31] The primary is of magnitude 4.59 and the secondary is of magnitude 4.68.[30] The system is 164 light-years from Earth.[35] The two components are separated by 7.8 arcseconds,[3] and the system as a whole has an apparent magnitude of 3.9.[13] The primary has a luminosity of 60 $L_\odot$ and the secondary has a luminosity of 56 $L_\odot$; the primary is an A-type star with an absolute magnitude of 0.2 and the secondary is a B9-type star with an absolute magnitude of 0.4.[30] The angle between the two components is 1°.[3] Mesarthim was discovered to be a double star by Robert Hooke in 1664, one of the earliest such telescopic discoveries. The primary, γ^1 Arietis, is an Alpha² Canum Venaticorum variable star that has a range of 0.02 magnitudes and a period of 2.607 days. It is unusual because of its strong silicon emission lines.[33]

The constellation is home to several double stars, including Epsilon, Lambda, and Pi Arietis. ε Arietis is a binary star with two white components. The primary is of magnitude 5.2 and the secondary is of magnitude 5.5. The system is 290 light-years from Earth.[12] Its overall magnitude is 4.63, and the primary has an absolute magnitude of 1.4. Its spectral class is A2. The two components are

separated by 1.5 arcseconds.[30] λ Arietis is a wide double star with a white-hued primary and a yellow-hued secondary. The primary is of magnitude 4.8 and the secondary is of magnitude 7.3.[12] The primary is 129 light-years from Earth.[36] It has an absolute magnitude of 1.7 and a spectral class of F0.[30] The two components are separated by 36 arcseconds at an angle of 50°; the two stars are located 0.5° east of 7 Arietis.[3] π Arietis is a close binary star with a blue-white primary and a white secondary. The primary is of magnitude 5.3 and the secondary is of magnitude 8.5.[12] The primary is 776 light-years from Earth.[37] The primary itself is a wide double star with a separation of 25.2 arcseconds; the tertiary has a magnitude of 10.8. The primary and secondary are separated by 3.2 arcseconds.[30]

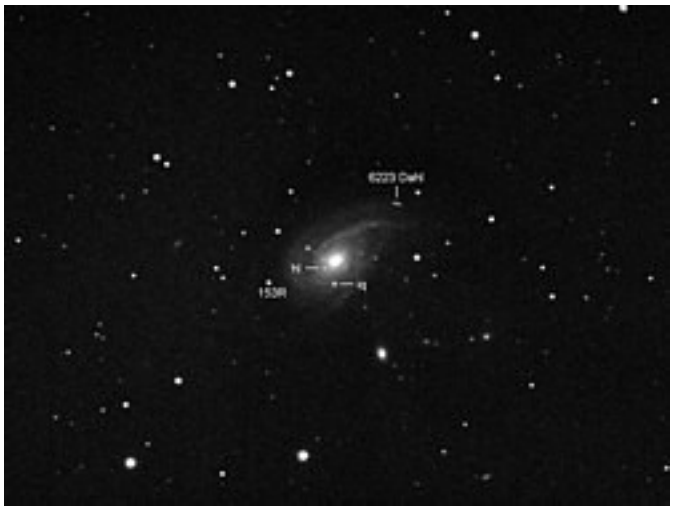
Most of the other stars in Aries visible to the naked eye have magnitudes between 3 and 5. δ Ari, called Boteïn, is a star of magnitude 4.35, 170 light-years away. It has an absolute magnitude of −0.1 and a spectral class of K2.[30][38] ζ Arietis is a star of magnitude 4.89, 263 light-years away. Its spectral class is A0 and its absolute magnitude is 0.0.[30][39] 14 Arietis is a star of magnitude 4.98, 288 light-years away. Its spectral class is F2 and its absolute magnitude is 0.6.[30][40] 39 Arietis (Lilii Borea[28]) is a similar star of magnitude 4.51, 172 light-years away. Its spectral class is K1 and its absolute magnitude is 0.0.[30][41] 35 Arietis is a dim star of magnitude 4.55, 343 light-years away. Its spectral class is B3 and its absolute magnitude is −1.7.[30][42] 41 Arietis, known both as c Arietis and Nair al Butain, is a brighter star of magnitude 3.63, 165 light-years away. Its spectral class is B8 and it has a luminosity of 105 $L_\odot$. Its absolute magnitude is −0.2.[30][43] 53 Arietis is a runaway star of magnitude 6.09, 815 light-years away.[33][44] Its spectral class is B2. It was likely ejected from the Orion Nebula approximately five million years ago, possibly due to supernovae.[33] Finally, Teegarden's Star is the closest star to Earth in Aries. It is a red dwarf of magnitude 15.14 and spectral class M6.5V. With a proper motion of 5.1 arcseconds per year, it is the 24th closest star to Earth overall.[45]

Variable stars

Aries has its share of variable stars, including R and U Arietis, Mira-type variable stars, and T Arietis, a semi-regular variable star. R Arietis is a Mira variable star that ranges in magnitude from a minimum of 13.7 to a maximum of 7.4 with a period of 186.8 days.[30] It is 4,080 light-years away.[46] U Arietis is another Mira variable star that ranges in magnitude from a minimum of 15.2 to a maximum of 7.2 with a period of 371.1 days.[30] T Arietis is a semiregular variable star that ranges in magnitude from a minimum of 11.3 to a maximum of 7.5 with a period of 317 days.[30] It is 1,630 light-years away.[47] One particularly interesting variable in Aries is SX Arietis, a rotating variable star considered to be the prototype of its class, helium variable stars. SX Arietis stars have very prominent emission lines of Helium I and Silicon III. They are normally main-sequence B0p—B9p stars, and their variations are not usually visible to the naked eye. Therefore, they are observed photometrically, usually having periods that fit in the course of one night. Similar to α^2s, SX Arietis stars have periodic changes in their light and magnetic field, which correspond to the periodic rotation; they differ from the α^2 Canum Venaticorum variables in their higher temperature. There are between 39 and 49 SX Arietis variable stars currently known; ten are noted as being "uncertain" in the General Catalog of Variable Stars.[48]

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

Deep sky objects



NGC 772, with a notated supernova

NGC 772 is a spiral galaxy with an integrated magnitude of 10.3, located southeast of β Arietis and 15 arcminutes west of 15 Arietis.[13] It is a relatively bright galaxy and shows obvious nebulosity and ellipticity in an amateur telescope. It is 7.2 by 4.2 arcminutes, meaning that its surface brightness, magnitude 13.6, is significantly lower than its integrated magnitude. NGC 772 is a class SA(s)b galaxy, which means that it is an unbarred spiral galaxy without a ring that possesses a somewhat prominent bulge and spiral arms that are wound somewhat tightly.[3] The main arm, on the northwest side of the galaxy,[33] is home to many star forming regions; this is due to previous gravitational interactions with other galaxies. NGC 772 has a small companion galaxy, NGC 770, that is about 113,000 light-years away from the larger galaxy. The two galaxies together are also classified as Arp 78 in the Arp peculiar galaxy catalog. NGC 772 has a diameter of 240,000 light-years and the system is 114 million light-years from Earth.[49] Another spiral galaxy in Aries is NGC 673, a face-on class SAB(s)c galaxy. It is a weakly barred spiral galaxy with loosely wound arms. It has no ring and a faint bulge and is 2.5 by 1.9 arcminutes. It has two primary arms with fragments located farther from the core. 171,000 light-years in diameter, NGC 673 is 235 million light-years from Earth.[49]

NGC 678 and NGC 680 are a pair of galaxies in Aries that are only about 200,000 light-years apart. Part of the NGC 691 group of galaxies, both are at a distance of approximately 130 million light-years. NGC 678 is an edge-on spiral galaxy that is 4.5 by 0.8 arcminutes. NGC 680, an elliptical galaxy with an asymmetrical boundary, is the brighter of the two at magnitude 12.9; NGC 678 has a magnitude of 13.35. Both galaxies have bright cores, but NGC 678 is the larger galaxy at a diameter of 171,000 light-years; NGC 680 has a diameter of 72,000 light-years. NGC 678 is further distinguished by its prominent dust lane. NGC 691 itself is a spiral galaxy slightly inclined to our line of sight. It has multiple spiral arms and a bright core. Because it is so diffuse, it has a low surface brightness. It has a diameter of 126,000 light-years and is 124 million light-years away.[49] NGC 877 is the brightest member of an 8-galaxy group that also includes NGC 870, NGC 871, and NGC 876, with a magnitude of 12.53. It is 2.4 by 1.8 arcminutes and is 178 million light-years away with a diameter of 124,000 light-years. Its companion is NGC 876, which is about 103,000 light-years from the core of NGC 877. They are interacting gravitationally, as they are connected by a faint stream of gas and dust.[49] Arp 276 is a different pair of interacting galaxies in Aries, consisting of NGC 935 and IC 1801.[50]

NGC 821 is an E6 elliptical galaxy. It is unusual because it has hints of an early spiral structure, which is normally only found in lenticular and spiral galaxies. NGC 821 is 2.6 by 2.0 arcminutes and has a visual magnitude of 11.3. Its diameter is 61,000 light-years and it is 80 million light-years away.[49] Another unusual galaxy in Aries is Segue 2, a dwarf and satellite galaxy of the Milky Way, recently discovered to be a potential relic of the epoch of reionization.[51]

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

Meteor showers

Aries is home to several meteor showers.
The Daytime Arietid meteor shower is one of the strongest meteor showers that occurs during the day, lasting from 22 May to 2 July. It is an annual shower associated with the Marsden group of comets that peaks on 7 June with a maximum zenithal hourly rate of 54 meteors.[52][53] Its parent body may be the asteroid Icarus. The meteors are sometimes visible before dawn, because the radiant is 32 degrees away from the Sun. They usually appear at a rate of 1–2 per hour as "earthgrazers", meteors that last several seconds and often begin at the horizon. Because most of the Daytime Arietids are not visible to the naked eye, they are observed in the radio spectrum. This is possible because of the ionized gas they leave in their wake.[54][55] Other meteor showers radiate from Aries during the day; these include the Daytime Epsilon Arietids and the Northern and Southern Daytime May Arietids.[56] The Jodrell Bank Observatory discovered the Daytime Arietids in 1947 when James Hey and G. S. Stewart adapted the World War II-era radar systems for meteor observations.[55]

The Delta Arietids are another meteor shower radiating from Aries. Peaking on 9 December with a low peak rate, the shower lasts from 8 December to 14 January, with the highest rates visible from 8 to 14 December. The average Delta Arietid meteor is very slow, with an average velocity of 13.2 kilometres (8.2 mi) per second. However, this shower sometimes produces bright fireballs.[57] This meteor shower has northern and southern components, both of which are likely associated with 1990 HA, a near-Earth asteroid.[58]

The Autumn Arietids also radiate from Aries. The shower lasts from 7 September to 27 October and peaks on 9 October. Its peak rate is low.[59] The Epsilon Arietids appear from 12 to 23 October.[8] Other meteor showers radiating from Aries include the October Delta Arietids, Daytime Epsilon Arietids, Daytime May Arietids, Sigma Arietids, Nu Arietids, and Beta Arietids.[56] The Sigma Arietids, a class IV meteor shower, are visible from 12 to 19 October, with a maximum zenithal hourly rate of less than two meteors per hour on 19 October.[60]

Planetary systems

Aries contains several stars with extrasolar planets. HIP 14810, a G5 type star, is orbited by three giant planets (those more than ten times the mass of Earth).[61] HD 12661, like HIP 14810, is a G-type main sequence star, slightly larger than the Sun, with two orbiting planets. One planet is 2.3 times the mass of Jupiter, and the other is 1.57 times the mass of Jupiter.[62] HD 20367 is a G0 type star, approximately the size of the Sun, with one orbiting planet. The planet, discovered in 2002, has a mass 1.07 times that of Jupiter and orbits every 500 days.[63] In 2019, scientists conducting the CARMENES survey at the Calar Alto Observatory announced evidence of two Earth-mass exoplanets orbiting Teegarden's star, located in Aries, within its habitable zone.[64] The star is a small red dwarf with only around a tenth of the mass and radius of the Sun.[64] It has a large radial velocity.[65]

The Astrogator
Grand Strand Astronomers Club Newsletter
Volume #4, Issue #5
July 1, 2026

Night Sky Chart

Heavens Above
Submitted by: Tim Kelly

Year: **2026** Month: **July** Day: **15** Hour:**22.00** Minute: **00:00** Second: **00:00**