San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach

February 2024

https://www.sdaa.org/
A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

Next SDAA Business Meeting
February 13th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting
February 21st
via Zoom

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February 2024, Vol LXII, Issue 2
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February 21st Program

Topic: Women in Astronomy, Credit Where Credit is Due
Speaker: Sharon Flemings

The February 21 program meeting speaker (via Zoom) is Sharon Flemings from the TVA "Chapter" in Florida.

Sharon is a Temecula Valley Astronomers (TVA) member currently living in St Augustine, Florida. She has even a visual astronomer since 2020 and an astroimager since 2023. She gave a very interesting presentation to TVA on women in astronomy last year, starting with a woman astronomer in 2285BC. Prepare to learn new perspectives about the history of women in science.

https://us02web.zoom.us/meeting/register/tZMude-sqz4sGN1qXv7qSlBwnYp-gaQEZZ8LU#/registration

Newsletter Deadline
The deadline to submit articles for publication is the **15th** of each month.

Link to SDAA Merchandise Store https://sdaa28.wildapricot.org/SDAA-Store

Link to Outreach Calendar https://calendar.google.com/calendar/embed?src=g-calendar@sdaa.org&ctz=America/Los_

San Diego Astronomy Association

San Diego Astronomy Association Board of Directors Meeting
January 9, 2024 – Unapproved and subject to revision

1. **Call to Order**
   The meeting was held via Zoom and was called to order at 7:06pm with the following board members in attendance: Dave Decker, President; Kin Searcy, Vice President; Mike Chasin, Treasurer; Gene Burch, Recording Secretary; Hiro Hakozaki, Director; Gracie Schutze, Director; Bee Pagarigan, Director; David Wood, Director; Steve Myers, TDS site maintenance committee, Bill Cecil, JSF chairperson.

2. **Approval of Last Meeting Minutes**
   The December meeting minutes were approved.

3. **Treasurers & Membership Report**
   The December Treasurer's report was approved. Mike said that membership was stable and we added 28 new student members. We're pretty much on budget and we reimbursed Bee $1254 for stickers. The final bank reports from Chase were not received in time for this month's treasurer report and will be included next month. Mike also reported that Chase has responded to our lawsuits and are interested in making a settlement. Because of this, the scheduled court dates have been postponed.

4. **Standard Reports**
   a. <u>Site Maintenance Report</u>
      Steve reported that repair on the warming room will be starting soon and will include checking the condition of the weight bearing walls, diverting water from the exterior walls and repair and painting of the siding. Once this work is done, we'll start on the bathrooms. The patio cover is still in need of replacement and we may take it down during the spring clean-up.

   b. <u>Observatory:</u>
      The 2024, schedule for Public and Member nights has been completed. The events will be added to the calendars soon.

   c. <u>Loaner Scope Report:</u>
      All but two of the loaner scopes are currently out.

      The 16" Meade LightBridge loaner still needs some work before it can be used. I will be purchasing a replacement secondary assembly (mirror+holder) and a few minor items to get the scope in working order.

      I will be picking up SDAA-001 on Jan 6 or Jan 9 to be sold or raffled at the banquet. It has already been removed from the website.

A new loaner has been donated - a very nice Meade LX85 setup with an 8" SCT and all the trimmings, including a Canon DSLR. This fortuitous donation completely changes the strategy for providing a proper astrophotography loaner. The LX85 mount can be paired with the 8" Orion Astrograph, plus accessories, to make a proper astrophotography rig. But it can also be paired with the SCT for visual (or for more ambitious astrophotography). We also have an iOptron Mini Tower Pro that was just donated that I can pair with the 8" SCT. This gives us a lot of new options for configuring loaners. A guide scope has also been donated, as well as a guide camera, further completing the astrophotography loaner.

With all of this new donated equipment, I'll be working in 2024 to refine the loaner process to be a bit more like a snow ski rental process. Instead of predefined numbered "kits", each lessee will be able to pick a mount, an OTA, and an accessory kit that suits their particular needs. This will allow the loaner program to be a lot more flexible and to meet the varying needs of our members (particularly those with astrophotography aspirations).

d. Private Pad Report:

We have 5 unleased pads, 1 in the process of being returned to the club, and 3 pads in the process of having their leases revoked (see 2 below). Two of the pads are in the process of having leases written (one will be written as soon as the keys are returned from the previous lessee). We have 7 people on the waiting list, although I need to work with Mike to verify that all of them are still members (several did not respond to my last pad offering).

Request the BOD approve revoking the leases to 3 pads for non-usage. All three pads have failed to renew their membership and pay their lease. The process for revoking the pad for non-usage is faster so I'd prefer to go that route.

I've reached out to all three pad holders, but I would like BOD approval to terminate the leases if they haven't appealed or responded by 2/1/2024.

The Board unanimously approved the request to terminate all three pad agreements effective February 1, 2024.

Annual Pad Report also submitted.

e. Program Meetings Report:

Kin reported that he has a tentative speaker for the February meeting but is waiting for confirmation. He and Bee are coordinating the handover of the Vice Presidents position

f. AISIG Report:

An AISIG meeting has been planned for January 24th, and as usual, will probably be a planning meeting for the year. Several members have been approached for possible presentations, but as of this point in time, no subject or guest speakers have been set.

g. Newsletter Report:
All looks great, additional details regarding the Banquet have been added!

h. Website Report:
I am assembling a new website for Julian StarFest. See wp.julianstarfest.com. Please take a look and send any suggestions.

I saw that Dave asked all subcommittee chairs to review the information on the SDAA website to ensure that it is current. Please send me any changes.

I will be updating the contacts on the SDAA website after the banquet. I know about the Board changes. If there are any other changes, or you would like to replace your picture, please send me the updates.

Thanks to Jeff and Steve for getting the calendars back on line so quickly.

i. Social Media:
We need to reach out to Jeff Flynn to make sure information on the banquet and auction are posted to our social media sites.

j. Outreach Report:
One of December's big events was our annual visit to the SD Children's Discovery Museum (**SDCDM**) in Escondido. The sky was clear, but the light pollution was typical. About 250 people ranging from ages 5 to 60 were there to attend their Science Night. There were many science activities inside and outside was a robotics 'hands-on' demo along with our SDAA stargazing with Chris Schmidt, Craig Storms, and Dennis Ammann. Dennis asked Shiri Puhovitsky, Director SDCDM if she had anyone without a job? She gave Dennis a high school student volunteer who was taught how to work his 12" Dob. This freed up Dennis to work his second telescope, a 90mm refractor which gave us four working telescopes.

About all we could show that crowd was Saturn and Jupiter. Craig and Chris were above to locate some fainter objects, but the light pollution dimmed them out. Always fun teaching astronomy there to the children and parents. We only visited one school, this month, Longfellow Elementary School with only two astronomers, Sonny Adams and Dennis Ammann. That event was almost cancelled because of the weather, but had half the sky clear for Saturn and Jupiter to show the children. Not very many people attended this event, so we had quality time with those who came for a look. K.Q. Ranch reminded us that winter has arrived, as everyone was cold, but enjoying the winter views, i.e., M31, Pleiades, Double Cluster, etc., plus Saturn and Jupiter.

Here are the numbers for December, and the totals for 2023.

2023	Previous Total	December	YTD
Completed	84	8	92
Canceled	37	1	38
Total Attendance	8803	560	9363

k. TARO Report:
TARO is operational and accepting imaging requests although the weather over the past month has limited imaging time. Four more members have requested access to the TARO image archive.

l. Cruzen Report:
Cruzen Observatory was reserved one time in December. The facility and equipment are operating normally. The next training opportunity will be in February or March.

The donated Celestron CGX that is assigned to the loaner program at the moment, is too large and cumbersome to be used as a loaner. It would be better suited as a permanently mounted observatory mount, and I believe it would be ideally suited to carry the TOA130 in Cruzen. The Celestron handset is much more intuitive to use for inexperienced members, and can just as easily be integrated to work with Stellarium. The Celestron handset does not require a battery to retain modeling settings, and is much less likely to corrupt its internal pointing model like the Gemini-2. Plus, the CGX is brand-new with zero hours of use, which hopefully means less maintenance and failure potential. However, replacing the Losmandy G11 with the CGX is a significant job, likely requiring adjusting the height of the pier and machining a new pier adapter plate. Not to mention all the retraining and updating of documentation. For these reasons (and because the G11 is working fine at the moment), I will move the CGX and its associated parts into Cruzen for storage until we decide what to do with it, to free up some space in the storage container.

m. Merchandise Report:
Gene reported that it was a slow month.

n. Astronomical League Report:
Nothing new at this time.

o. JSF Report:
Bill Cecil asked for input from the board as to which observatory to visit in 2024, Mt. Laguna or Palomar. The general consensus was that Mt. Laguna is closer and easier, but Palomar is better set up to handle tours. Bill is working with Jeff Stevens on updating web page material and asked for Board approval for the following.

1. On website, indicate there is a deadline for registration, on RV, camper, tours at least one week before scheduled date. Also asked that we increase the prices one month before the event to encourage early registration. The Board agreed

2. On website, indicate the number of spaces still available like a countdown for all categories. Wild Apricot should handle this automatically.

3. Clarify the definition of a car, tent, RV size class A, B, C, teardrop, van, 5th wheel and what categories for registration they would fall into. We'll work offline to resolve this.

4. Preregistration is required for observatory tour. No on-site registration.

p. Primary Grid Reconstruction Report:
Baker Electric has responded to inquiries on project quotes. A statement of work and property layouts have been supplied to Baker Electric along with power usage requirements. They seem very interested and hopefully we'll have an initial estimate soon.

5. Old Business:

a.	Ethics or Conflict of Interest policy is still in work.	Chasin
b.	Bee is still working with Jeff Stevens on some minor tweaks to the website, but overall it's looking good.	Bee
c.	Paul has inventoried and cleaned out the Conex box at TDS and several telescopes have been put in our auction.	Decker

6. **New Business**:

a.	TDS site usage rules sufficient for now	Decker
b.	We need to review and update the Pad Lease agreements	Decker
c.	We need to review insurance regarding liability, D&O and Outreach	Decker
d.	We need to decide what to do for the eclipse in April. Will coordinate with Dennis and the Outreach team.	Decker
e.	There have been reports from several people that the lock on the Warming room is difficult to use.	Bee

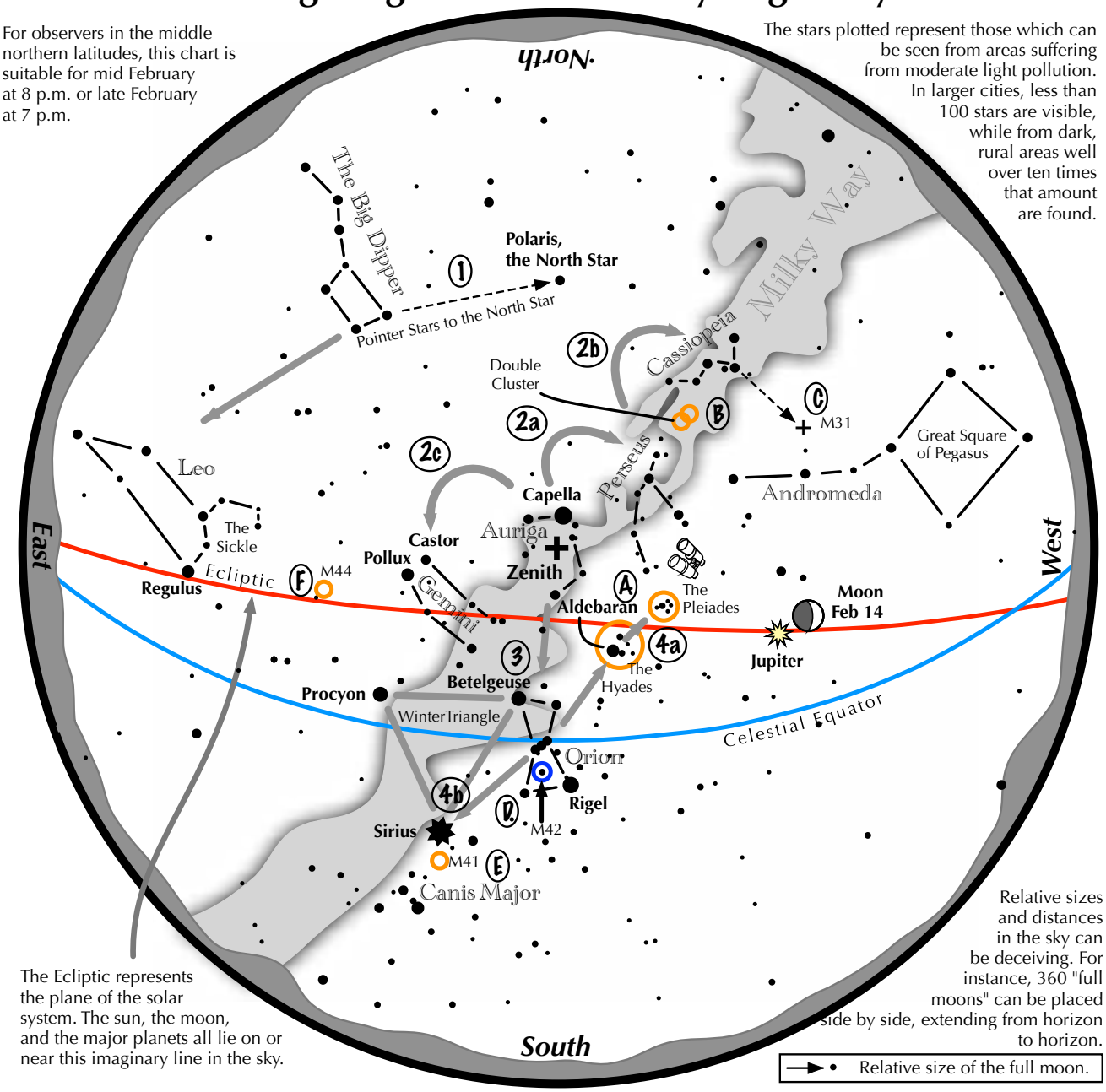
7. **Adjournment:** The meeting was adjourned at 8:36pm.

San Diego Astronomy Association

Navigating the mid February Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid February at 8 p.m. or late February at 7 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 February night sky: Simply start with what you know or with what you can easily find.

1. Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star.
2. Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
3. Directly south of Capella stands the constellation of Orion with its three Belt stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
4. Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius, a member of the Winter Triangle.

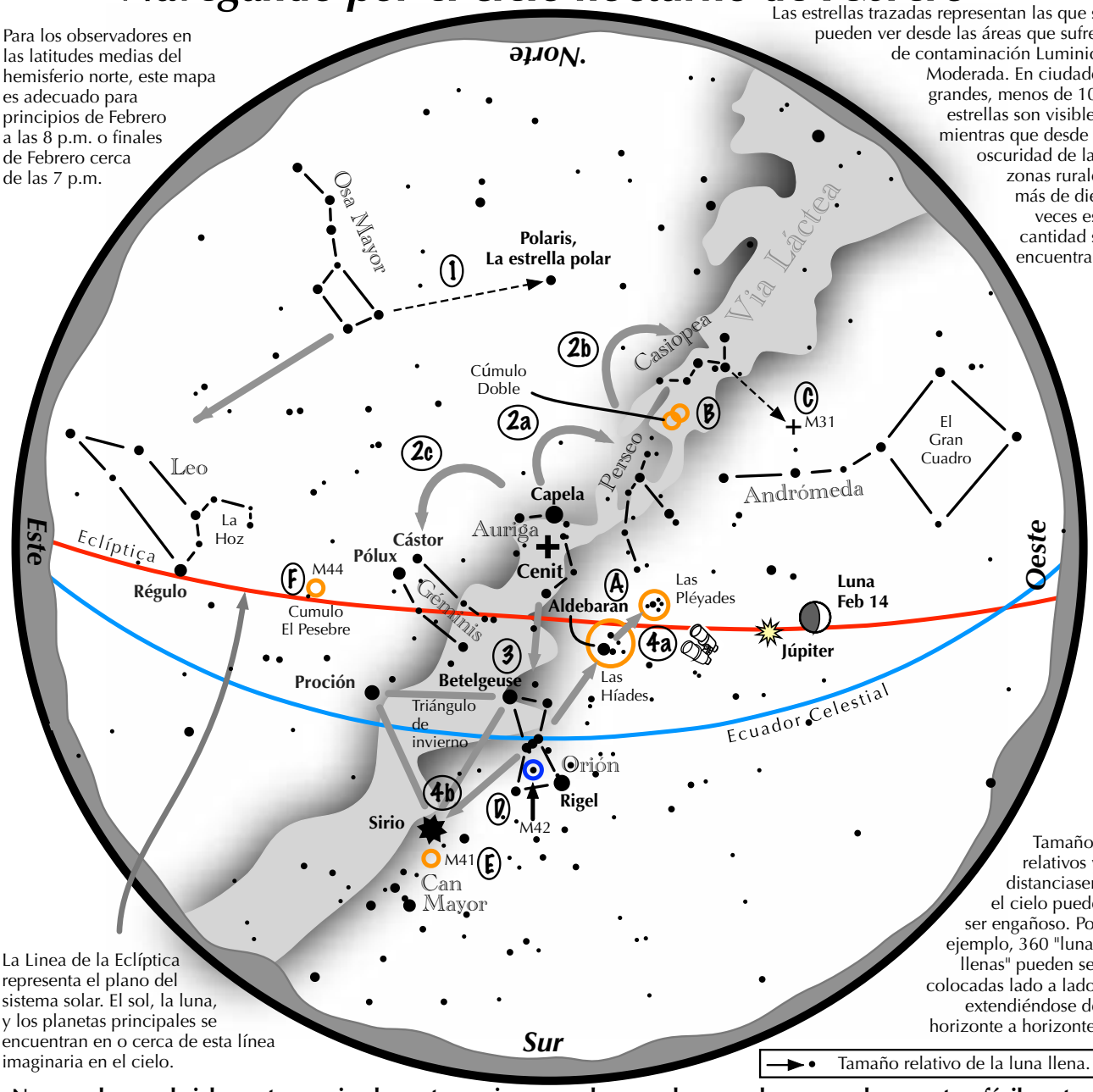
Binocular Highlights

A: Examine the stars of two naked eye star clusters, the Pleiades and the Hyades.
B: Between the "W" of Cassiopeia and Perseus lies the Double Cluster.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: M42 in Orion is a star forming nebula. **E:** Look south of Sirius for the star cluster M41. **F:** M44, a star cluster barely visible to the naked eye, lies southeast of Pollux.

Navegando por el cielo nocturno de Febrero

Para los observadores en las latitudes medias del hemisferio norte, este mapa es adecuado para principios de Febrero a las 8 p.m. o finales de Febrero cerca de las 7 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.

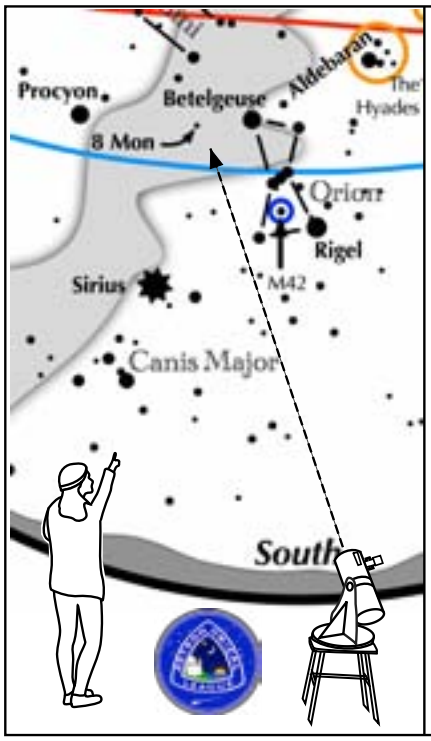
1. Sobre el horizonte noreste se alza la Osa Mayor. Dibuja una línea desde sus dos estrellas finales hasta la estrella polar.
2. Desde Capela, salte hacia el noroeste a lo largo de la Vía Láctea hacia Perseo, luego hacia la "W" de Casiopea. Siguiente salto hacia el sureste desde Capela a las estrellas gemelas de Cástor y Pólux en Géminis.
3. Directamente al sur de Capela se encuentra la constelación de Orión con sus tres estellas del Cinturón de Orión, su brillante estrella roja Betelgeuse y su brillante estrella azul-blanca Rigel.
4. Usa las tres estrellas del Cinturón de Orión para apuntar al noroeste hacia la estrella roja Aldebarán y el cúmulo estelar Hiades, y luego hacia el cúmulo estelar de las Pléyades. Viaja hacia el sureste desde las estrellas del cinturón hasta la estrella más brillante en el cielo nocturno, Sirio. Es un miembro del Triángulo de invierno.

Puntos destacados con binoculares

A: Examina las estrellas de las Pléyades y las Híades. **B:** Entre la "W" de Casiopea y Perseo se encuentra el Doble Cúmulo de Perseo. **C:** Las tres estrellas más occidentales de la "W" de Casiopea apuntan hacia el sur hasta M31, la Galaxia de Andrómeda, un óvalo "borroso." **D:** M42 en Orión es una nebulosa formadora de estrellas. **E:** Mire al sur de Sirio para ver el cúmulo estelar M41. **F:** M44, un cúmulo de estrellas apenas perceptible a simple vista, se encuentra al sureste de Pollux.

Traducción al español por Dr. Salvador Aguirre **Liga Astronómica** *www.astroleague.org/outreach;* Duplicación permitida y fomentada para toda distribución

ASTRONOMICAL LEAGUE Double Star Activity



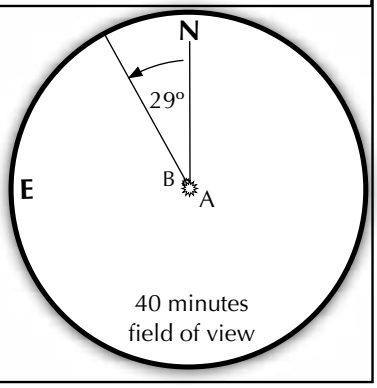
Other Suns: Epsilon (8) Monocerotis

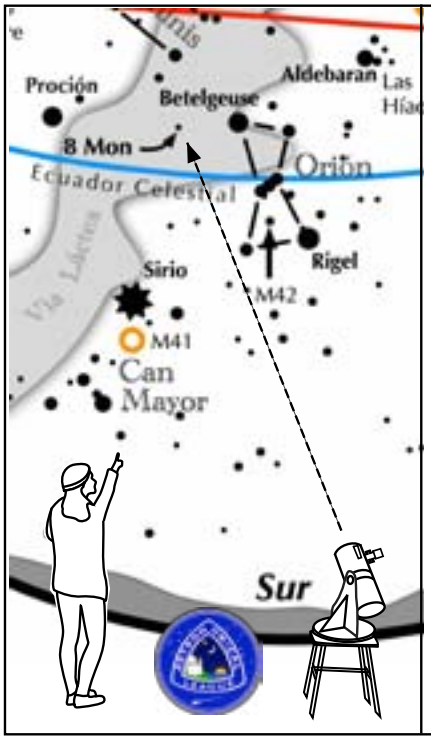
How to find Epsilon Monocerotis on a February evening

Face south. Look for the Winter Triangle stars of Betelgeuse and Procyon. Epsilon Monocerotis is about 1/3 between Betelgeuse and Procyon. It is a 4.3 magnitude star so dark skies are needed to spot it.

Suggested magnification: >20x
Suggested aperture: >3 inches

Epsilon (8) Mon
A-B separation: 12 sec
A magnitude: 4.4
B magnitude: 6.6
Position Angle: 29º
Colors:
white
lilac





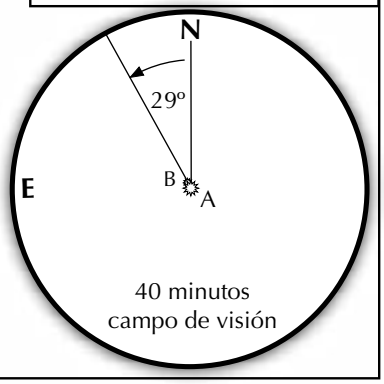
Otros Soles: Epsilon (8) Monocerotis

Cómo encontrar a Epsilon Monocerotis en una tarde de Febrero

Mira hacia el sur. Busque las estrellas del Triángulo de Invierno de Betelgeuse y Proción. Es una estrella de magnitud 4,3 por lo que se necesitan cielos oscuros para detectarla.

Ampliación sugerida: >20x,
Apertura sugerida: >75 mm

Epsilon (8) Mon
A-B separación: 12 sec
A magnitud: 4.4
B magnitud: 6.6
PA: 29º
Colores:
blanca
lila



Another Look, February 2024 Taurus

"The Ram, the Bull, the Heavenly Twins,
And next the Crab the Lion shines,
The Virgin and the Scales.
The Scorpion, Archer, and He Goat,
The Man that holds the watering-pot,
And Fish with glittering scales."

Saturday the 10th @ 0301 is February's New moon. February's Full moon will be on Saturday the 24th @ 0530. It will be a "Micro" Full moon. Traditionally, February's full moon is called the Full Snow moon. Having lived 20 years in North Carolina on the Blue Ridge Mountains, I can attest to that fact. Native American names for the February moon are Bald Eagle moon, Bear moon, Bony moon, Eagle moon, Hungry moon and Groundhog moon.
In French Pleine Lune de Fevrier, in German, Vollmond im Februar, in Italian, Luna Piena di Febbraio and in Greek, Πανσέληνος Φεβρουαρίου, Panselinos Fevrouariou.

Taurus is old. Known as Le Taureau in France, il Toro in Italy, and is the der Stier of Germany. Seemingly worldwide, via the ancient Zodiacs preserved for us, Taurus is one of the earliest and most noted constellations, perhaps the first or one of established, because it marked the vernal equinox from about 4000 to 1700 BC. It was called the "Bull of Light" in Babylon. We believe Taurus was identified with Marduk, their chief god, and called the "Spring Sun". 15000 years ago the bull, the Pleiades, the Hyades and the belt of Orion were painted on a cave wall in Lausaux, France.

Egypt also has Apis, the Bull, In a tomb in Thebes, then the capital of the lower kingdom. Twelve constellations have hieroglyphics assigned to them. The Pleiades represented the bull and was named Atauria, becoming our Latin Taurus and German Thier. As a zodiacal sign the bull marked the beginning of the year, migrating from Akkadia and Babylon through Persia, Chaldea, India and Egypt, along with their zodiacs.. Even lingering down the centuries to Mithras, the main deity of the Roman legions.

The Persian and Jewish scholars historically named the zodiacal constellations by giving them letters, such a A, B, C etc. Taurus was A, the first sign of the zodiac as it was in the Kabbalah. Prior to the Roman conquest, the Druids of what we now know as the British Isles and Ireland worshiped the Bull during their Tauric festival, when the sun entered the constellation, coming down to us today as Mayday and in Scotland the rising of the Bull marking Candlemas.

Among the ancient Chinese Taurus was known as "the White Tiger"; later it was called "the Golden Ox." Strangely enough we find that native South Americans in the Amazon called this star group "the Ox."

In South Africa they are known as the hoeing stars,

"All of this history shows us a proof that for centuries throughout prehistory, there was a transmigration, or a means of communication between the land masses.

Sweet Europa's mantle blew unclasp'd,
From off her shoulder backward borne,
From one hand droop'd a crocus, one hand grasp'd
The mild Bull's golden horn

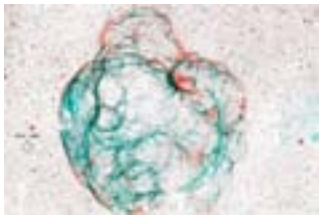
Europa was the daughter of Agenor and a Princess of Phoenicia. Jupiter is/was not a nice guy. The Greeks seemed to endow all of their baser instincts into the deities allowing them to be bloodthirsty and ribald, thus excusing themselves of any fault. Jupiter turned himself into a white bull and insinuated himself into Agenor's herd. It seemed Jupiter the bull was so beautiful that Europa could not resist adorning him with garlands of flowers and then climbing onto his back. Jupiter immediately carried her away, swimming to Crete where she bore him three sons: Minos of Crete, Rhadamanthys of the Cyclades and Sarpedon of Lycia. Thought never making it any further west than Crete, somehow she gave her name to an entire continent.

> The strand he gained and forward he sped like a dolphin, faring with unwetted hooves over the wide waves, and the sea as he came grew smooth, and the sea monsters gamboled around before the feet of Jupiter, and the dolphin rejoiced and rising from the deeps he trembled on the swell of the sea. The Nereids arose out of the salt waters and all of them came on in orderly array, riding on the backs of sea beasts. Moschus

As a nascent astronomer, I had a tendency to overlook Taurus somewhat. Between the globulars of Auriga and the Trapezium in Orion, two open star clusters and a crab were dealt with in short order. As I began to learn more, however, I came to realize that Taurus had little to offer the visual astronomer except for two open star clusters and a crab. So we live and learn.

Burnham lists over 120 multiple star systems and variables. Houston raves about a planetary and I have learned about a molecular cloud rivaling M42. Taurus has over 80 systems with exoplanets, some with multiple satellites. There are 5 Collinder open clusters, 11 open clusters total, 5 galaxies 14th magnitude and brighter and 17! named stars.

You won't see too much of the Taurus molecular cloud visually except for two areas of nebulosity associated with dark nebula. IC 2087 and IC 2088. What you will see is a star-scape strewn with diamonds.



Another object that will be very difficult to observe is Simeis 147, a supernova remnant almost 3^0 in size. If your mirror is large enough, you may be able to glimpse it unaided, but a Hα filter will give you your best chance. Look for it up by **β**, Elanth, straddling the line between Taurus and Auriga.

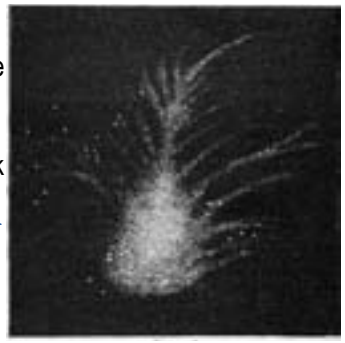
Up near the border with Perseus is a planetary nebula noteworthy for creating a sea-change in astronomical thinking. NGC 1514 is the Snowball Nebula. 1514 is 2 or 3 arc. min. in dimension, about half the apparent size of Tycho crater on the moon. At 9th magnitude you will see the central star easily though results vary on how easy it is to see the planetary shell. Back in 1790 William Herschel wrote:

> A most singular phenomenon! A star of about 8th magnitude with a faint luminous atmosphere of circular form, and about 3 minutes in diameter. The star is in the centre, and the atmosphere is so faint and delicate and equal throughout that there can be no surmise of its consisting of stars; nor can there be a doubt of the evident connection between the atmosphere and the star.

There is one Caldwell object in Taurus, C41, the Hyades and 5 Collinder Open Clusters; Cr's 50, the Hyades, Cr 54-N1647, 57 – N1746, 60 – N1817 and 65. They are all easy binocular objects, the dimmest being Cr 60 at 8th magnitude. Less than an open cluster, N1746 is considered an asterism.

Near the **δ**'s and **ε** is Hind's Variable Nebula. Hind's is illuminated by T Tauri, a variable star shining from 9th to 11th magnitude over a 27 year period. As a result, the nebula with also brighten and fade over the same period. Then, of course, there is the Sasquatch Nebula, He is easy to find, not too far from **ζ** zeta, given name Tianguan. M1 is 2^0 to the NE, a middle Telrad circle. Be reminded that it doesn't look like the photographs, but you can still see a lot using your eye. You'll love it.

Image by Lord Rosse 1848



Taurus has 17 stars with proper names. In the Hyades there is Aldebaran, Theta **θ** Tauri is named Chamukuy, In the mythology of the Maya peoples, Chamukuy is a small bird in the Yucatec Maya language. **E ε** tauri marks one of the vertices of the Hyades triangle. It has the name Ain, derived from the Arabic. John Flamsteed named the star Oculus Boreus, Latin for northern eye. Then there is Prima Hyadum and Secunda Hyadum, meaning the first and second of the Hyades. Prima marks the nose and Secunda marks the multiple star system **δ** delta, Two stars surrounded by many smaller ones, halfway between the nose and the ear, **ε** epsilon.

Other stars to point out in the Hyades are the small bi-color group the theta **θ's.** Also look for close doubles kappa **κ** and mu **μ.** Hoggar is **τ** tau, halfway to Elnath, **β** beta. The tip of the other horn is **ζ** zeta, Tianguam.

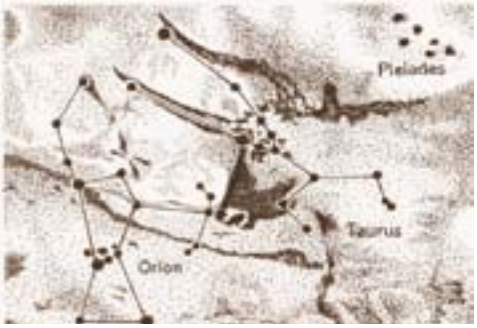
> In lustrous dignity aloft see Alpha Tauri shine,
> The splendid zone he decorates attests the Power divine:
> For mark around what glitt'ring orbs attract the wandering eye,
> You'll soon confess no other star has such attendants nigh. Serviss

In one of the stories the Hyades and the Pleiades are sisters of Atlas and Pleione. They had a brother named Hyas who died while hunting. This so saddened the sisters that they wept, thus bringing annual storms.

The Pleiades are ancient, much older than the usual Greek myths and older than Homer. There name, however, does come from the Greek word **pleein,** meaning “to sail”, clearly referencing that at their setting, stormy winter is passing and spring is nigh.

My most memorable view of the Pleiades was through a pair of 25 x100 binoculars setup on the upper telescope field at RTMC. I remember coming back again and again just to reset the image and look once more. The star field was covered in mist and the stars bright and hard. Each time I looked a had to catch my breath.

The Pleiades are the proof how important the stars are historically. The 15,000 year old image from Lausaux cave in France shows a bull under the 7 or is it 8 stars of the Pleiades. I believe he also painted the Hyades on its head. An imaginative interpretation can find even more figures hidden in the paint.



The name by which the Pleiades are known among the Polynesians is the "Tau”. Tau marks a season, and as with the Egyptians, the Pleiades delineates a time of celebration and feasting. Perhaps this is another piece of data that points to cultural mingling going back thousands of years.

It has always been written the we can see only six Pleiades though tribal memory recalls seven. The seven are the daughters of Atlas, or the Atlantides, whose names were Merope, Alcyone, Celaeno Electra, Taygeta, Asterope, and Mala. Per Hyginus, the seventh star in the group dimmed towards the end of the second millennium BCE.

When the Pleiades were photographed in 1888 by Paul and Prosper Henry, it was found that the seven stars were veiled in nebulous folds clinging to and filling the spaces between with filmy mist and wreaths of stellar gauze. Thus was Tennyson's picturesque description written in the well-known lines —

Many a night from yonder ivied casement, ere I went to rest,
Did I look on great Orion sloping slowly to the West.
Many a night I saw the Pleiads, rising thro' the mellow shade,
Glitter like a swarm of fire-flies tangled in a silver braid.

As picturesque as Tennyson writes of Locksley Hall there is a bit of a problem. Charles Messier lived 87 years, passing in 1817. He was a comet hunter and compiled a list of fuzzy objects not to be confused with comets. Messier's telescopes would have had difficulty resolving M45 into stars. Maybe what he saw was a misty ball with specs of stars shining. Tennyson wrote Locksley Hall in 1888, when he was 79 years old, 3 years before he died.
Rather than the "Pleiads" looking through "yonder ivied casement", what he actually saw in a beautiful example of poetic license.

By the way, the Maia nebula bears the NGC number 1432 and vdB 21, the Merope nebula is 1435 and vdB 22. Electra is vdB 20 and Alcyone is surrounded by van der Berge vdB 23. You can find the van der Berge catalog at https://www.emilivanov.com/CCD Images/Catalog_VdB.htm.

So, you tell me. Isn't Taurus the month to take your sweetie out to look through your telescope at "a swarm of fire-flies tangled in a silver braid."?

Dark Skies Dave

Thank you, "The Far Side"

Their names have been thus recorded by Aratus . — These seven names they bear Alcyone and Merope, Celaeno, Taygeta, and Sterope, Electra, And queenly Maia, small alike and faint, But by the will of Jove illustrious all At morn and evening, he makes them mark Summer and winter harvesting and seed time

Hesiod, who wrote about 200 B C., shows how they were observed in his time as signs for the seasons —

When, Atlas-born, the Pleiad stars arise
Before the sun above the dawning skies,
Tis time to reap ,and when they sink below
The moon-illummed west, 'tis time to sow

And, of course, per Mrs. Sigourney,
. . . go forth at night
And talk with Aldebaran, where he flames In the cold
forehead of the wintry sky. "The Stars"

San Diego Astronomy Association

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Have a great new piece of gear? Read an astronomy-related book that you think others should know about? How about a photograph of an SDAA Member in action? Or are you simply tired of seeing these Boxes in the Newsletter rather than something, well, interesting?

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This article is distributed by NASA's Night Sky Network (NSN).
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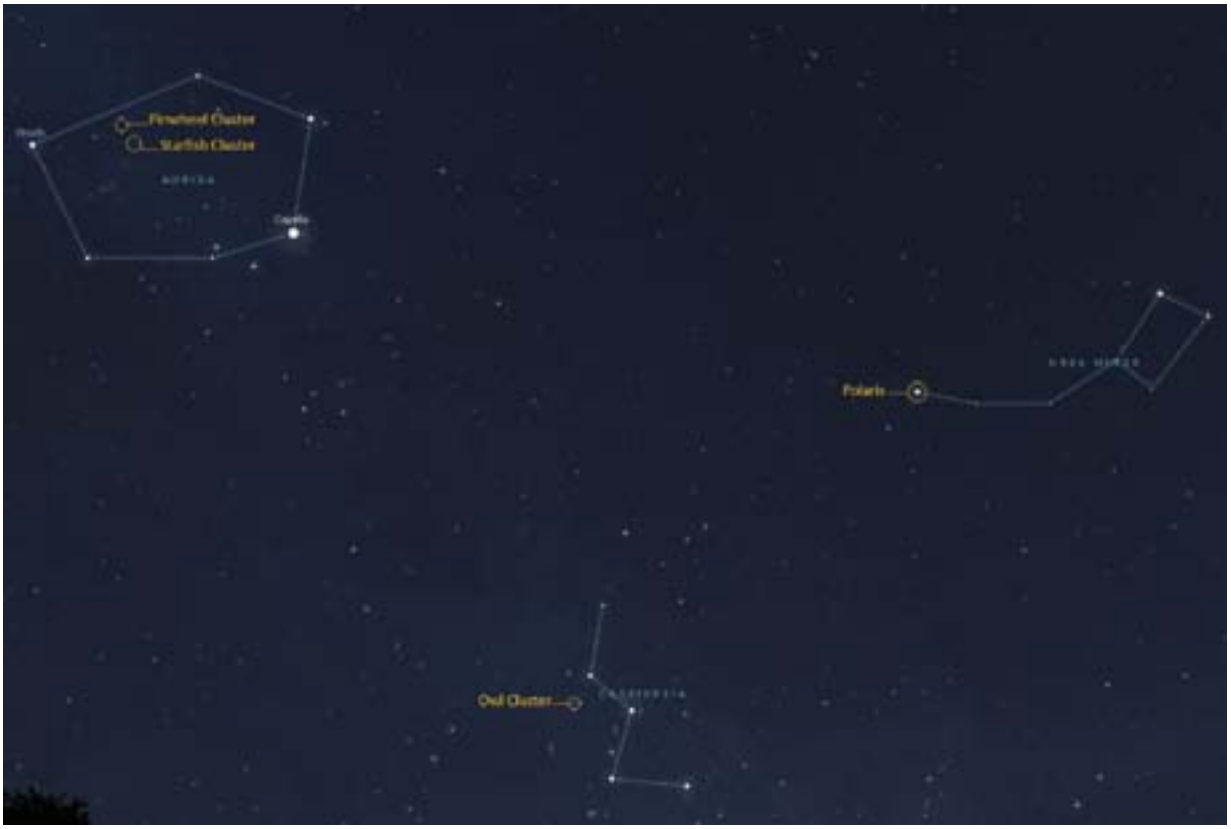
Constant Companions: Circumpolar Constellations, Part I

By Kat Troche

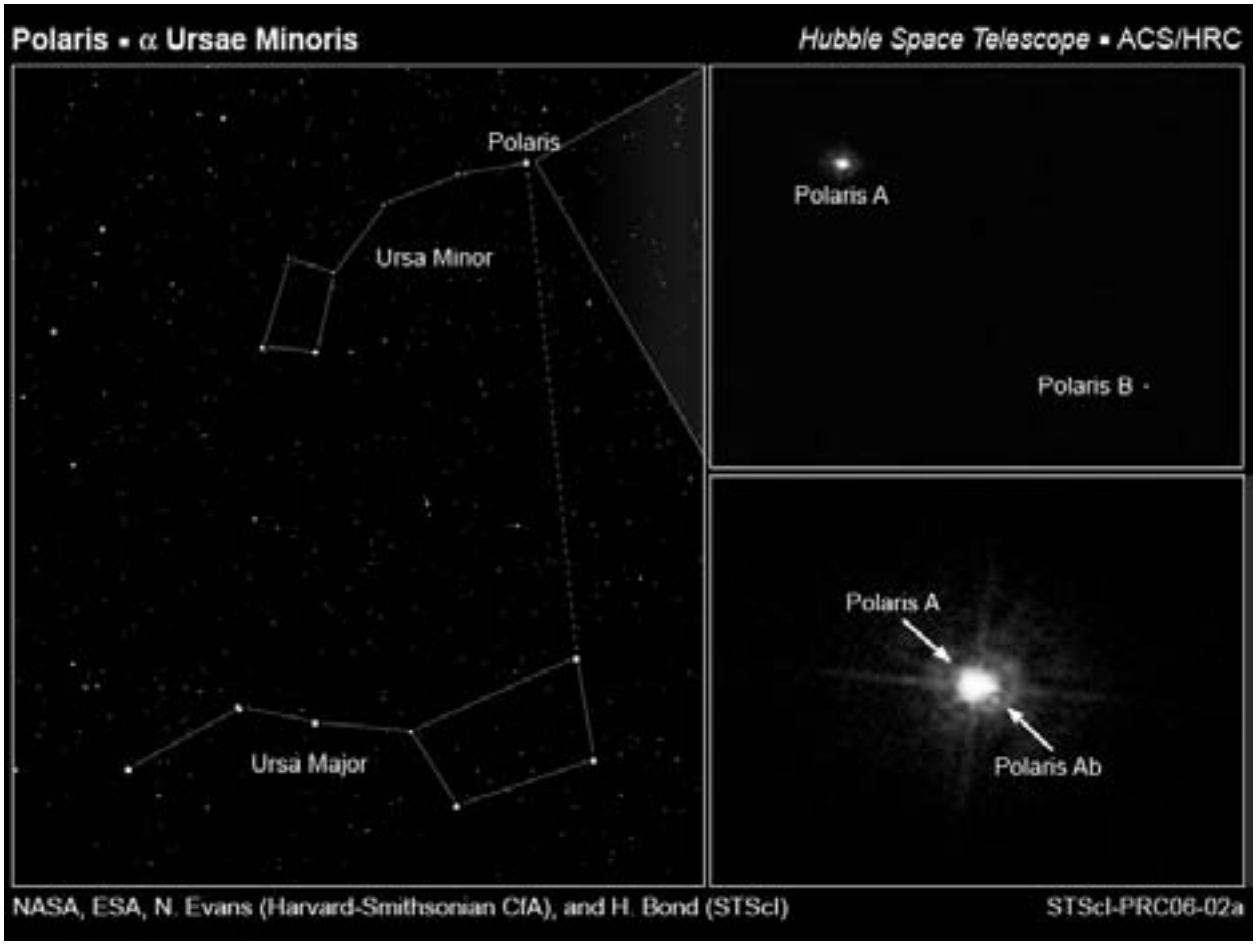
Winter in the northern hemisphere offers crisp, clear (and cold!) nights to stargazers, along with better views of several circumpolar constellations. What does circumpolar mean when referring to constellations? This word refers to constellations that surround the north and south celestial poles without ever falling below the horizon. Depending on your latitude, you will be able to see up to nine circumpolar constellations in the northern hemisphere. Today, we'll focus on three that have gems within: **Auriga, Cassiopeia, and Ursa Minor**. These objects can all be spotted with a pair of binoculars or a small to medium-sized telescope.



The counterclockwise circumpolar constellations Auriga, Cassiopeia, and Ursa Minor in the night sky, with four objects circled in yellow labeled: Pinwheel Cluster, Starfish Cluster, Owl Cluster, and Polaris.
Credit: Stellarium Web

- **The Pinwheel Cluster:** Located near the edge of Auriga, this open star cluster is easy to spot with a pair of binoculars or small telescope. At just 25 million years old, it contains no red giant stars and looks similar to the Pleiades. To find this, draw a line between the stars Elnath in Taurus and Menkalinan in Auriga. You will also find the **Starfish Cluster** nearby.

- **The Owl Cluster:** Located in the 'W' or 'M' shaped constellation Cassiopeia, is the open star cluster known as the **Owl Cluster**. Sometimes referred to as the E.T. Cluster or Dragonfly Cluster, this group of stars never sets below the horizon and can be spotted with binoculars or a small telescope.



A black and white image from the Hubble Telescope of the Polaris star system, showing three stars: Polaris A, Ab, and Polaris B.
Credit: NASA, ESA, N. Evans (Harvard-Smithsonian CfA), and H. Bond (STScI)

- **Polaris:** Did you know that Polaris is a triple star system? Look for the North Star on the edge of Ursa Minor, and with a medium-sized telescope, you should be able to separate two of the three stars. This star is also known as a *Cepheid variable star*, meaning that it varies in brightness, temperature and diameter. It's the closest one of its kind to Earth, making it a great target for study and conceptual art.

Up next, catch the King of the Planets before its gone for the season with our upcoming mid-month article on the Night Sky Network page through NASA's website!

San Diego Astronomy Association

2024 TDS Star Party Schedule

Date	Type	Sunset	Astro. Twi.	Moonrise(set)	Closing	Illumination
Jan-06-24	Public	4:57 PM	6:24 PM	3:07 AM	9:30 PM	26.5%
Jan-13-24	Member	5:03 PM	6:30 PM	(7:50 PM)	9:30 PM	8.5%
Feb-03-24	Public	5:22 PM	6:47 PM	1:55 AM	9:30 PM	44.0%
Feb-10-24	Member	5:29 PM	6:52 PM	(6:39 PM)	9:30 PM	1.4%
Mar-02-24	Public	5:47 PM	7:09 PM	12:46 AM	10:00 PM	61.4%
Mar-09-24	Member	5:52 PM	7:14 PM	5:52 AM	10:00 PM	0.6%
Apr-06-24	Member	7:12 PM	8:37 PM	5:20 AM	11:00 PM	6.0%
Apr-27-24	Public	7:27 PM	8:57 PM	11:36 PM	11:00 PM	88.3%
May-04-24	Member	7:33 PM	9:04 PM	4:20 AM	11:30 PM	16.0%
May-11-24	Public	7:38 PM	9:12 PM	(11:53 PM)	11:30 PM	17.7%
Jun-01-24	Public	7:51 PM	9:31 PM	2:50 AM	11:30 PM	28.5%
Jun-08-24	Member	7:55 PM	9:36 PM	(10:31 PM)	11:30 PM	6.8%
Jul-06-24	Member	7:59 PM	9:40 PM	(9:07 PM)	11:30 PM	1.1%
Jul-27-24	Public	7:50 PM	9:24 PM	11:58 PM	11:30 PM	56.6%
Aug-03-24	Member	7:44 PM	9:17 PM	(7:44 PM)	11:30 PM	0.6%
Aug-31-24	Public	7:13 PM	8:38 PM	4:59 AM	11:00 PM	5.2%
Sep-07-24	Public	7:04 PM	8:28 PM	(9:20 PM)	11:00 PM	20.0%
Sep-28-24	Member	6:36 PM	7:58 PM	3:52 AM	10:30 PM	14.5%
Oct-05-24	Member	6:27 PM	7:48 PM	(7:54 PM)	10:30 PM	8.6%
Oct-26-24	Public	6:02 PM	7:25 PM	2:42 AM	10:30 PM	28.1%
Nov-02-24	Public	5:56 PM	7:19 PM	(6:30 PM)	10:00 PM	1.7%
Nov-30-24	Member	4:42 PM	6:09 PM	7:11 AM	9:30 PM	0.4%
Dec-21-24	Public	4:47 PM	6:15 PM	11:15 PM	9:30 PM	63.2%
Dec-28-24	Member	4:51 PM	6:19 PM	6:00 AM	9:30 PM	5.2%

SDAA is now registered with the employer fund-matching platform Benevity. If your workplace offers matching charitable donations for non-profits and uses Benevity to distribute funds, you can now designate the San Diego Astronomy Association. Thank you for supporting the SDAA!

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