

San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach



August 2024

<https://www.sdaa.org/>

A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

Next SDAA Business Meeting

August 13th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting

August 21st
Mission Trails Regional Park
Visitor and Interpretive Center
1 Father Junipero Serra Trail

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Newsletter Deadline

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

August 21st Program

Topic: The Nancy Grace Roman Space Telescope: NASA's Next Flagship Mission
Speaker: Rob ZelleM BS, MSc, PhD



Dr. Rob ZelleM is an astrophysicist at NASA's Goddard Space Flight Center. His research focuses on the characterization of the atmospheres of exoplanets using both the transit and direct imaging methods. Rob is the Deputy Project Scientist for Communications for NASA's Nancy Grace Roman Space Telescope where he is the primary liaison between the Roman Project Science team and Goddard's Office of Communications. He is also a member of the Roman Coronagraph Project Science team where he led the development of the science calibration plan. He is the Project Scientist and Lead for Exoplanet Watch, a citizen science project to observe transiting exoplanets to update their ephemerides to ensure the efficiency use of large telescope time. He is the Ground-Based Sub-working Group co-lead for Pandora, whereby he is coordinating ground-based observations to support both the operations and scientific interpretation of Pandora data. He is also a co-lead for NASA's Nexus for Exoplanet System Science (NExSS) and a science team member for the NASA's CASE contribution to ESA's Ariel mission.

The meeting will be held via Zoom.

See <https://sdaa.org/program-meeting/>

<https://us02web.zoom.us/meeting/register/tZMude-sqz4sGN1qXv7qSIBwnYp-gaQEZZ8LU#/registration>

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>



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San Diego Astronomy Association Board of Directors Meeting July 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; Bee Pagarigan, Vice President; Mike Chasin, Treasurer; Gene Burch, Recording Secretary; David Wood, Corresponding Secretary; Kin Searcy, Director; Steve Myers, Director; Gracie Schutze, Director. Also in attendance were members Brian McFarland, Melany Biendara, John Downing, Pat Boyce, Alan Ruckle, Ed Rumsey, Paul Krizak and Prascilla Morquecho. Director Hiro Hakozaki was absent.

2. Approval of Last Meeting Minutes

The June meeting minutes were approved.

3. Treasurers & Membership Report

Mike Reported that there was a dip in membership, primarily because members who were past due for over 60 days were deleted. We had a lot of expenses, all of which were expected, including final payments for the warming room/LIPP repairs, the GROW reveal event and Astronomical League dues. The 2023/2024 budget was pretty much in line with the exception of legal expenses relating to setting up the new SDAA Foundation and upgrading the By-Laws and Articles of Incorporation. The Treasurer's report was approved.

Mike also went over the proposed budget for fiscal year 2024/2025, which had been previously circulated to the Board. Mike said he has reviewed the budget with our accountant and will contact our lawyer to determine the best way to transfer money between SDAA and the SDAA Foundation. After review, the budget was unanimously approved pending the opinion of our lawyer.

4. Standard Reports

a. Site Maintenance Report:

- LIPP/Warming Room Building Improvements – The work has been completed.
- Lessee of Pad 21 reporting power outage at his pad on 6/13/24. Tested other pads with voltmeter and believe the row of pads that includes 13-60 are also without power.

Private Pads to be inspected and identified with respective numbers on July 21, 2024 by Private Pad Committee Members.

The committee is working on the following items and will seek future board action.

1. Contacts for reports of electrical outage at TDS: Steve Myers, Ed Rumsey, Dave Wood?
2. How can members “safely” try to restore power? (Check breaker box, etc.)



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3. Are we prepared to purchase more power banks? (Amazon Prime Sale coming up, may have to implement check-out system eventually).

b. Observatory:

An annoying communications connection on the new Nexus DSC Pro has been identified and repaired. The system was tested extensively and is operating very well.

The Lipp 2024/2025 budget request (\$1,000) has been submitted to Mike Chasin – please look kindly upon it when the time comes (the request has been approved).

c. Loaner Scope Report:

Ten (!!) loaner items are currently out, with two more items pending pickup at the July exchange opportunity. One scope is due back in July and is expected to swap out for another scope.

One new scope has entered service:

- SDAA-035 (16" Meade LightBridge) the altitude brake has been constructed and tested and seems to work well. Movement is smooth with very little stiction. The altitude bearing can now be braked to move with just a slight touch (with light eyepieces) or braked heavily to support heavy eyepieces. A counterweight (included) is still advised for use with heavy counterweights.

With all these loaner scopes out, we ran out of eyepiece kits! I had to turn away some loans due to lack of eyepieces. As a result, I have formally requested a one-time budget extension of \$3,000 to procure 3-4 new eyepiece kits with semi-premium oculars, with a focus on ensuring that our large scopes are properly equipped with wide-field 2" eyepieces to aid in locating objects manually. The request to purchase the eye pieces was approved.

d. Private Pad Report:

With the recent pads we reclaimed for non-usage, we currently have 10 pads available for lease and 15 people on the waiting list, most of whom have passed up the majority of the pads available already. A few of the new people on the waiting list are looking to put up remote observatories and I'm trying to steer them towards the south fence area where there are some light trespass issues for visual observers that could be mitigated with a properly designed structure (plus there is a lot of room there for solar panels). I just offered all of the pads available to the entire waiting list and gave people until the beginning of August to get out to TDS to look at the pads in person. I expect to be able to lease several of the available pads by mid-August.

Private Pad Policy Review Committee Hakozaki/Schutze/Myers/Smith/Pagarigan Tasks

Tasks Completed at June 5, 2024, 7pm Zoom Meeting

- Identified need to produce an Enforcement Policy and Fine Schedule for Private Pads



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- Pad Committee members to inspect private pads at least two times per year to ensure compliance
- General consensus is that currently 50-70% of private pads are not in compliance
- Selected method (8x8x16 concrete block/stenciled reflective number, etc.) to mark each pad with assigned number

Tasks to be completed by Committee

- Website private pad photos, visible to public, need to be updated.
- A photo catalog of the inside of private pad structures to be completed to satisfy annual audit of structures per current lease agreement statement 6 and 10 (photos will not be posted publicly).
- Method to track remote pad owner annual usage.
- Clarification of pad transfer process to ensure waiting list is honored.
- Identify all pads with reflective numbers posted on a permanent rebar stake or similar
- Inspection and evaluation report of all pad areas

Next Meeting is Sunday, July 21, 2024, 10am in-person at TDS

e. Program Meetings Report:

- SDAA attendees of the Grand Canyon Star Party to be featured, along with Vikram Chandra (GSDSEF update) at the July 17, 2024 Program
- Rob Zellem from NASA/JPL, a returning speaker who ran the Exoplanet Watch program, will be the August 2024 program speaker.
- Speakers for Science in Space at the ISS National Laboratory confirmation in progress.
- Open speaker slots remaining in 2024 – September, and October.

Speaker Suggestions from Membership:

1. Richard Stember <richard@scienceheads.org>, Author of *Share the Universe – a Guide to Outreach Astronomy*.
2. Dr. Jessie Christiansen - Dr. Christiansen is a research scientist at the NASA Exoplanet Science Institute at Caltech/IPAC.
3. Lisa Kaltenegger; Author of *Alien Earths: The New Science of Planet Hunting in the Cosmos*.

f. AISIG Report:

The AISIG Zoom meeting on 6-26 featured Warren Keller briefly describing some of the newer processes in PixInsight and the Master of PixInsight teaching forums. The meeting was well received with over 40 attendees. There are plans to move forward with hosting an in person P.I. session with SDAA members familiar with the P.I. interface. There is also the possibility of having Warren travel to San Diego for a live session with AISIG members interested in having more of a deep dive into PixInsight in an interactive environment. The next AISIG meeting is scheduled for 7-24. Subject - TBD

g. Newsletter Report:

Nothing new to report this month, but as always Andrea is doing a great job.



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h. Website Report:

Webmaster report:

Set up online meeting announcement and countdown timer for SDAA Grows event.

Set up countdown timer for bylaws and articles of incorporation vote.

Set up draft SDAA Grows web page <https://sdaa.org/sdaa-grows/>.

Posted new Lipp DSC documents.

Set up JSF sponsors page. <https://julianstarfest.com/sponsors/> . Will add more as needed.

i. Social Media:

Bee reported the following:

SDAA Social Media Committee Charter Members – Francisco Contreras, Danielle Nadeau, Pagarigan, Flynn

SDAA Social Media Committee Charter – WIP, overall goal is to increase SDAA club exposure to draw interest and increase membership

Current Status of SDAA Social Media Accounts

- Instagram, 537 Followers (and concurrently with Threads, a Twitter-like replacement at 72 Followers) - Active
- YouTube, 642 Subscribers - Active
- Facebook Public, Private 440 members - Active
- Twitter (“X”) 124 Followers – Not Active (Last SDAA Admin post in 2021), suggest abandoning this app for now
- Feedback from numerous SDAA members indicate that it would benefit the club to have a greater social media presence. Most of the activity is on FB via member-posted astrophotography. We could do a better job routinely highlighting more of the club assets such as TARO, CRUZEN, The LIPP, loaner scope program, and photos/videos of weekly outreach events.

Suggested Strategy Going Forward

- Establish an SDAA Social Media Committee – a few SDAA members who are currently active in the club have expressed interest in joining the effort.
- Write a simple committee charter for board approval to include overall mission and short-term goals, i.e., consistency of engagement, feature club assets regularly to gain new members, post outreach event photos/short videos, etc.
- Decide which social media sites to add as we gain committee members to share responsibilities
- Confirm and update SDAA Asset sheet with all usernames and passwords

j. Outreach Report:

The June *Gloom* hindered our efforts to provide the public a look into the San Diego night sky. The events that were completed included either partly cloudy skies or haze. A good example was Stars-in-the-Park where the coastal marine layer comes in each night at



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sunset. Our only genuine success was K.Q. Ranch (**KQR**) on June 29th. We had a great turnout with 8 astronomers and one of the best night skies ever seen. It was **dark**, thanks to the KQR staff; the sky was **dry** as a bone void of any humidity; and it was **clear** as a bell. The Milky Way was almost as bright as some of us saw it on the South Rim, Grand Canyon National Park, earlier in June. My sister and I camped out at KQR, got up early Sunday morning and watched the 'parade of planets' rise in the east before sunrise. They consisted of Saturn as the highest object, Neptune, crescent moon, Mars, and Jupiter (with all 4 Galilean Moons). We couldn't see Neptune because of the moon's light pollution. A KQR family joined us on the eastern KQR ridge overlooking the desert floor for a look at this astronomical view. In reference to the Grand Canyon, numerous SDAA members were there in June for the Grand Canyon Star Party, showing people from all over the world one of the best night skies in the USA. On average, 400 people walk through the bus parking lot behind the main visitor center to view the dark sky through about 60 telescopes.

Here are the numbers for June:

2024	Previous Total	June	YTD
Completed	26	6	32
Canceled	24	1	25
Total Attendance	3334	209	354

k. TARO Report:

Two new member imaging requests have been added to the project observation list. The licenses for ACP And Maxim DL have been updated and Jeff will be installing those updates shortly.

Active Projects - 8, Total imaging time = 138 hours

Finished Projects - 2

Deferred Projects - 1

TARO is powered off until the current high heat warnings have subsided. Nighttime temps are not low enough to allow the camera to properly cool for imaging.

l. Cruzen Report:

The Cruzen facility was reserved once in June. The facility remains in good mechanical condition.



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I was able to install ultrasonic rodent deterrents at Cruzen in June. These are battery-powered devices that have been modified with an internal relay that shuts off when 12V external power is applied. The 12V lines are wired to the Cruzen 12V main power bus. So, when the facility is powered on, the rodent deterrents power off, and vice-versa. We'll see how it performs.

The Cruzen Director (Paul Krizak) is seeking to transfer management of Cruzen to another member. Interested members should reach out to the club leadership. A current Cruzen certified member with experience using the facility would be ideal. The Board has begun their search and is actively seeking volunteers.

m. Merchandise Report:

A few more shirts, hats and stickers were sold last month.

n. Astronomical League Report:

Nothing new.

o. JSF Report:

JSF Committee Meeting: Held meeting July 7th.

1. Submitted additional documentation to County Permit for food vendors and use of Menghini ware washing. Waiting for final approval. Email to County requesting status 7/5.
2. Have commitments from several food vendors. Nandri Indian Café, Purple Owl Cafe, Loko Bean Café.
3. ACE parking contracted for public parking 8/3.
4. Most raffle prizes have been received. Will prepare a board identifying what will be given away.
5. Volunteer positions have been filled with several backups if needed.
6. Will post to club request for scopes designated for public viewing in designated area 8/3.
7. Price increase to happen on July 15th. Will post to club, Campers \$40 raise to \$50, RV 100 raise to \$125. Please modify the event page to reflect price increase on that date. Palomar sold out.
8. Will post to club there will be a swap meet at 3:00 p.m. 8/2 and 8/3 until 6:00.
9. Committed speakers, Vivek V. Importance of dark skies, Dr. Douglas Leonard "Seeking Stars that Explode, the Hunt for Supernova Progenitors, Woody Deep Sky Objects, Dennis Explore the Constellations. Would like to get one more suggestion?
10. Will post program events at entry. Will have sign prepared as soon as events finalized.

Sample of events:

Event Schedule – Friday August 2nd

11:00 a.m. Menghini Winery tasting room opens

12:00 p.m. Open for Camper and RV check in

1:00 p.m. Daytime solar observing

Dusk - Dawn: Telescope Viewing

Event Schedule – Saturday August 3rd



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8:00 a.m. – Open for Camper and RV check in
9:00 a.m. - Departure to Mt Palomar Observatory
10:00 a.m. – Merchant Booths Open
10:00 a.m. – Kids Crafts in picnic area
10:30 a.m. – Mt. Palomar tour starts for preregistered guests
11:00 a.m. – Menghini Winery tasting room opens
2:00 p.m. - Woody Schlom Solar Viewing
2:00 p.m. – Kids Crafts in picnic area
3:00 p.m. – Swap meet at the exhibit area
6:00 p.m. - Raffle & award to Menghini Winery
Tickets available at registration – 1 for \$5, 5 for \$20
7:00 p.m. – Setup for public star party
7:00 p.m. – Vivek The importance of dark skies
8:00 p.m. - Dr. Douglas Leonard, Seeking Stars that Explode, The Hunt for Supernova Progenitors.
Dusk – 11 p.m. – Public star party
9:00 p.m. - Woody Schlom Deep Sky Objects
9:45 p.m. - Dennis Ammann Constellation Laser Show

Event Schedule – Sunday August 13th

10:00 a.m. - StarFest Closes all campers to leave the grounds
Please clean up your area

p. Grid: Discussion, Options, Mitigation:

Thanks to John Downing, Pat Boyce, Paul Krizak, Ed Rumsey, Alan Ruckle, Brian McFarland, Mel Biendara, and Prascilla Morquecho for joining the Board meeting and providing valuable input.

After discussion, and in anticipation of pending construction, a motion was made by Kin Searcy to shut off all power at TDS as soon as possible, to provide for a licensed and insured electrical contractor (Baker) or other, to inspect the existing electrical grid, make minor emergency repairs, and to provide us with a detailed status report.

The motion was seconded and passed with a unanimous vote (Director Hiro Hakozaiki was not present). The site will remain generally open to contributing members, but initially there will be no power available. Updates will be circulated to members via our membership portal.



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5. Old Business:

- a. GROWS after action Chasin
The Reveal event came in about \$10,000 under budget.
- b. Cruzen Director status Decker
We're still looking for someone to replace Paul as the Cruzen Director
- c. 2024/2025 Budget (SDAA) Chasin
See Treasurer's Report
- d. Other Old business – none Decker

6. New Business:

- a. Election Status Chasin
The new By-Laws and Articles of Incorporation were overwhelmingly approved. The voting will be open until July 31st.
- b. Grid Liability: Discussion, Options, Mitigation Decker
See above
- c. Local Storage Facility Search Pagarigan
Bee is researching the possibility of renting a storage facility that is more centrally located than TDS. The facility could be used to store Loaner Scopes and other items that are currently stored in the Conex boxes at TDS. Paul stated that it would be a big help to the Loaner Scope program to have the scopes closer to town.
- d. Contest for New SDAA Logo/Letterhead Pagarigan
We are going to have a contest to design a new logo and letterhead for the club. Bee will announce the contest at the next meeting and John Downing said he has a contact who may be able to help with the design.
- e. Email Access Issues Pagarigan
We're having intermittent issues with emails not getting delivered or rejected. This seems to be happening primarily with accounts associated with Spectrum or Road Runner email addresses.
- f. Other New Business Decker
None

7. Adjournment: The meeting was adjourned at 9:32pm.



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Julian StarFest will be held August 2-4 at the Menghini Winery

Volunteers for the day of the event are being requested to send their information to info@JulianStarfest.com

Tasks include, Camper intake and parking, directing public parking, camp break down, merchandise booth, telescopes available for public viewing.

Tasks usually run 2 to 4 hours.

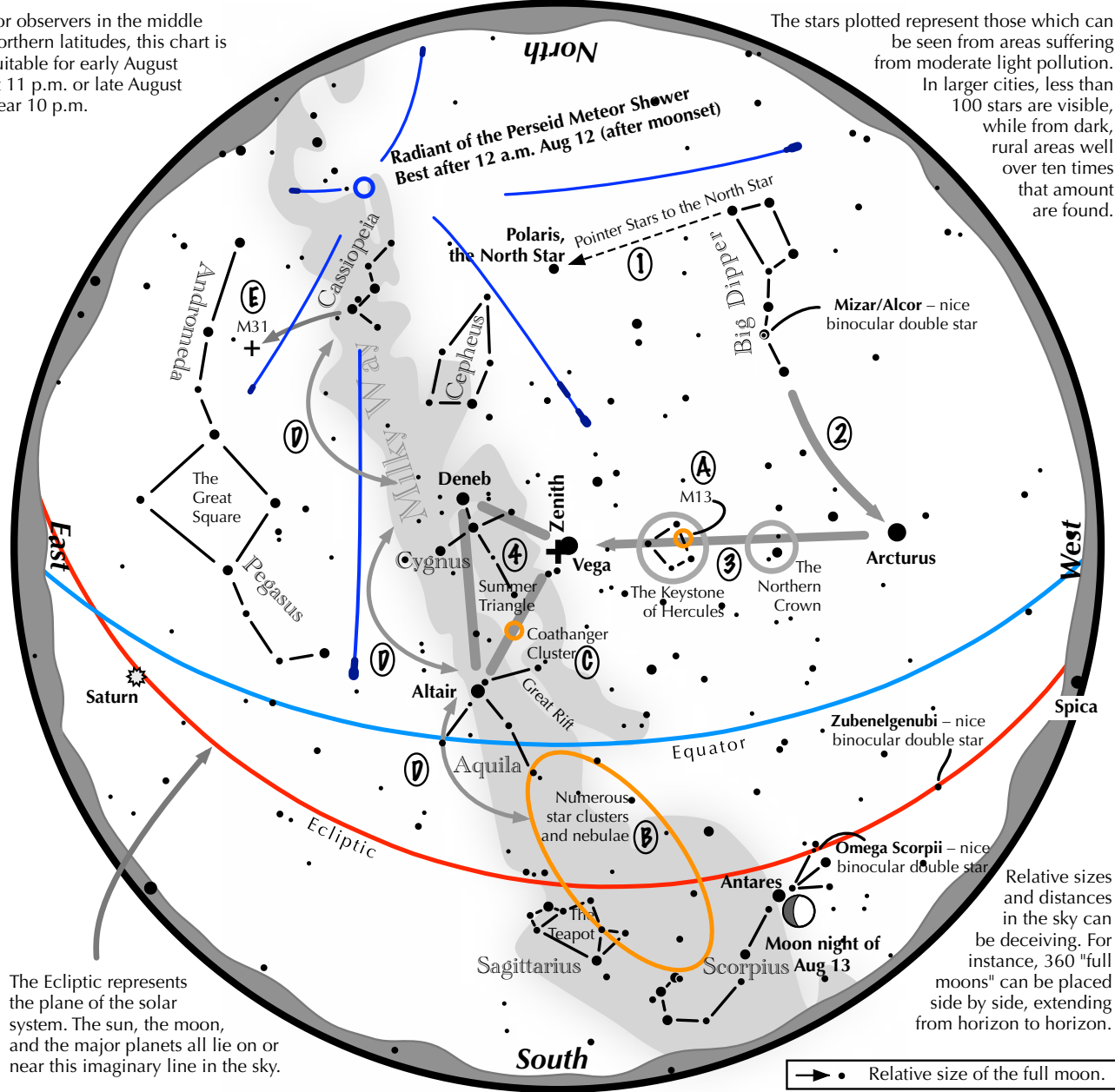


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Navigating the mid August Night Sky

For observers in the middle northern latitudes, this chart is suitable for early August at 11 p.m. or late August near 10 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 mid August 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 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.
- 3 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.
- 4 High in the East lies the summer triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

- A: On the western side of the Keystone glows the Great Hercules Cluster.
- B: Between the bright stars 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, including the Great Rift.
- E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.



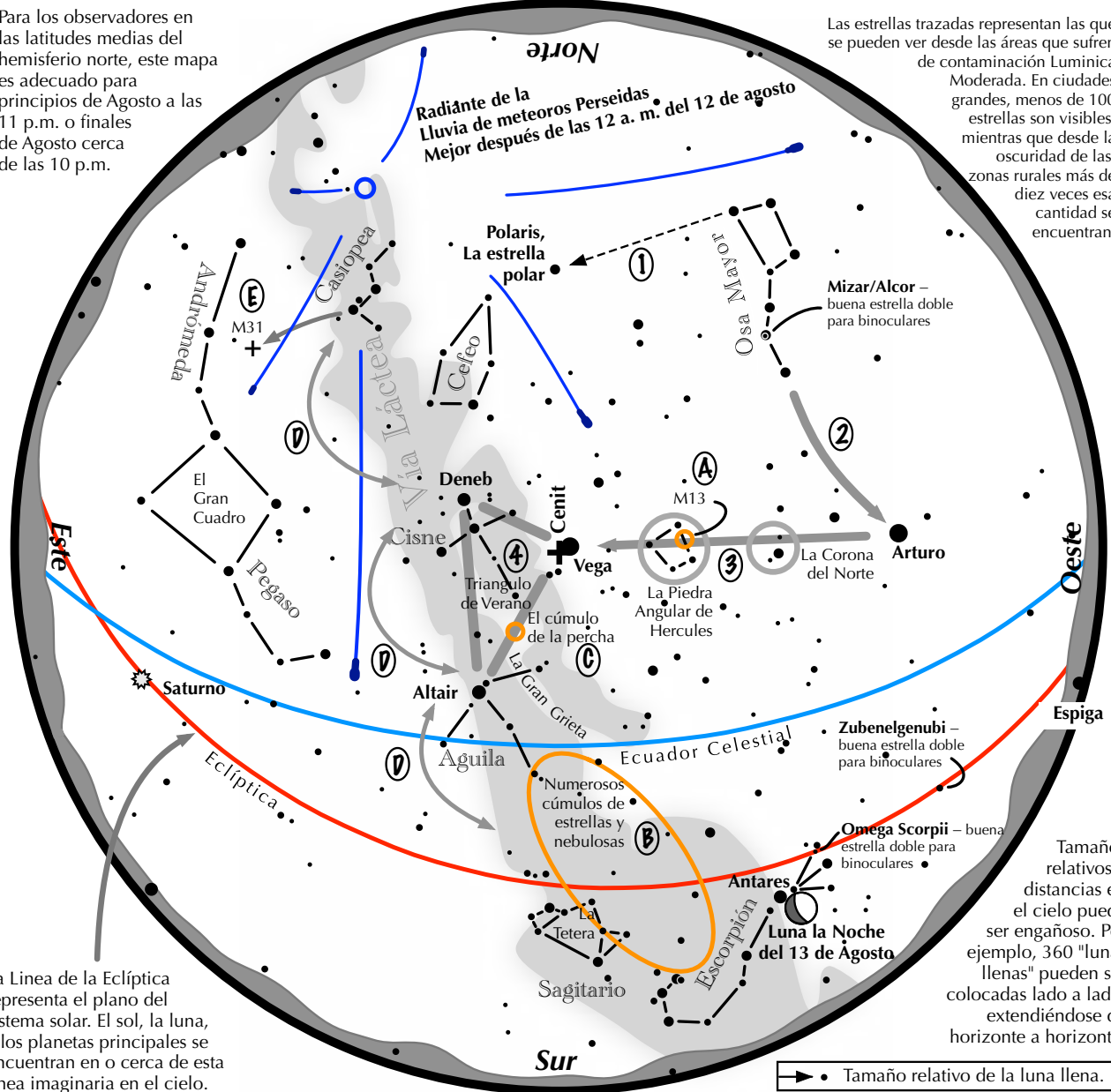


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Navegando por el cielo nocturno de Agosto

Para los observadores en las latitudes medias del hemisferio norte, este mapa es adecuado para principios de Agosto a las 11 p.m. o finales de Agosto cerca de las 10 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 Línea 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 distancias en 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 Siga el arco del mango del tazón de la Osa Mayor, continúa hacia Arturo, luego continúa hacia Espiga.
- 3 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.
- 4 En lo alto del este se encuentran las tres estrellas brillantes del Triángulo de verano: Vega, Altair y Deneb.

Puntos destacados con binoculares

A: En el lado occidental de la Piedra Angular de Hércules. **B:** Entre las brillantes estrellas Antares y Altair, se esconde un área que contiene muchos cúmulos de estrellas y nebulosas. **C:** Casi a la mitad de la distancia entre Altair y Vega, Brilla la "Percha," un grupo de estrellas que describe un perchero.

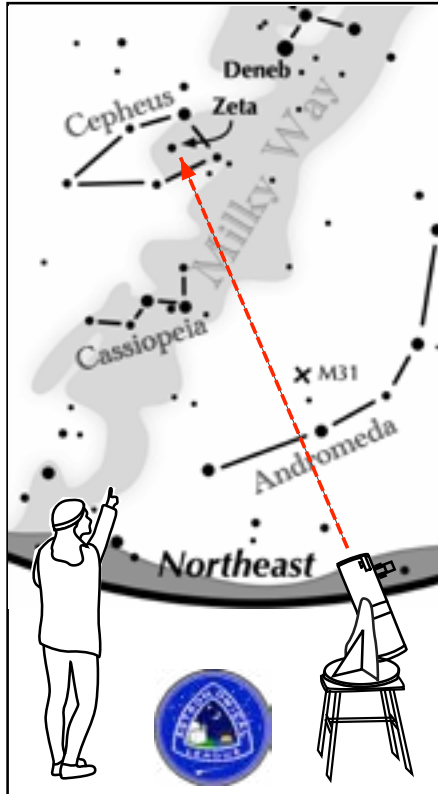
D: Recorre la Vía Láctea en busca de un número asombroso de destellos tenues y bahías oscuras, incluido La Gran Grieta. **E:** Las tres estrellas más occidentales de las "W" de Casiopea apuntan hacia el sur hasta M31, la Galaxia de Andromeda, un óvalo "borroso."





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ASTRONOMICAL LEAGUE Double Star Challenge



Other Suns: Zeta Cephei

How to find Zeta Cephei on an August evening

Find the stars forming the house shape of Cepheus, which is the constellation above Cassiopeia in the early evening in August. Zeta is the central star in the southerly portion of the house shape of Cepheus.

Suggested magnification: >50x
Suggested aperture: >3 inches

Zeta Cephei

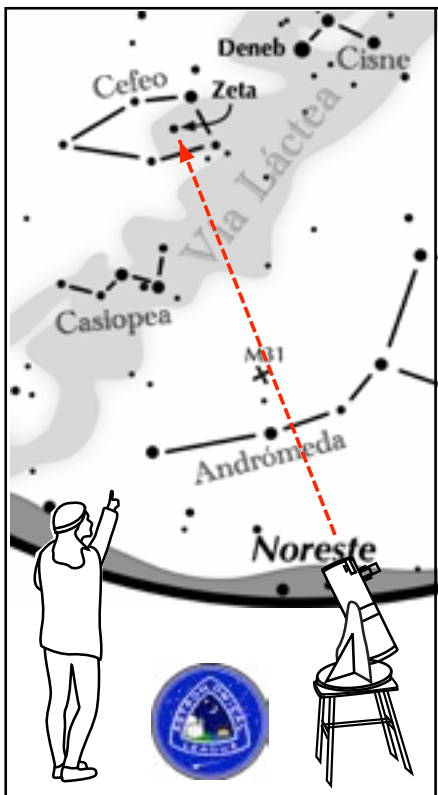
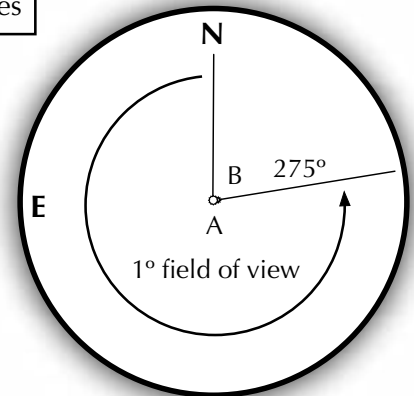
A-B separation: 7.9 sec

A magnitude: 4.4

B magnitude: 6.4

Position Angle: 275°

A & B colors: white & blue



Otros Soles: Zeta Cephei

Cómo encontrar Zeta Cephei en una tarde de agosto

Encuentra las estrellas que forman la forma de casa de Cefeo, que es la constelación sobre Casiopea a primera hora de la tarde de agosto. Zeta es la estrella central en la parte sur de la forma de la casa de Cefeo.

Ampliación sugerida: >50x,
Apertura sugerida: >75 mm

Zeta Cephei

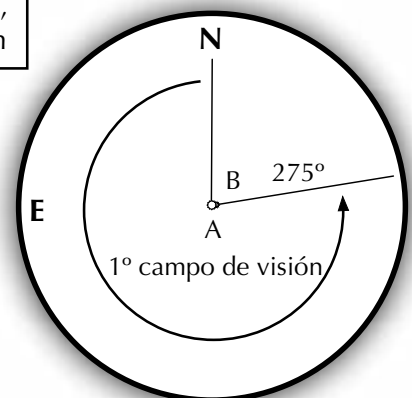
A-B separación: 7.9 sec

A magnitud: 4.4

B magnitud: 6.4

PA: 175°

A & B colores: blanca & azul



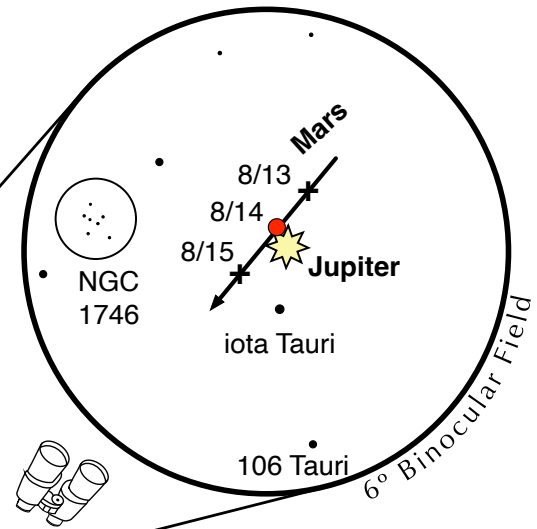
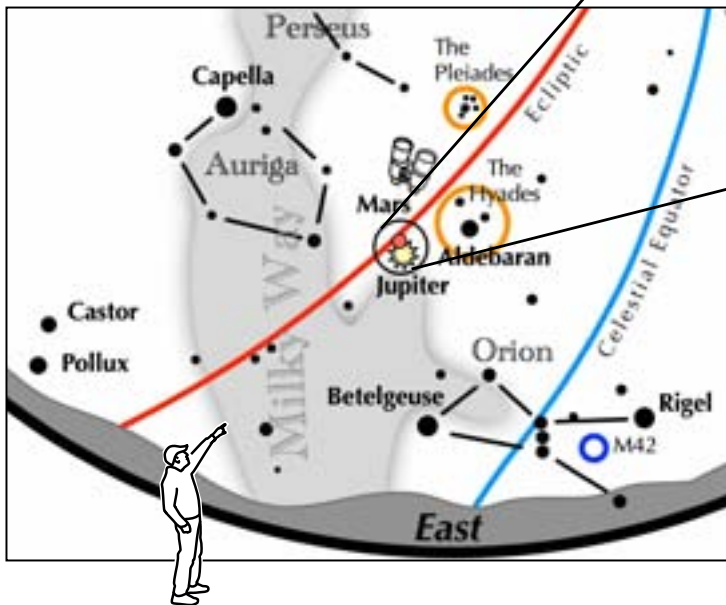


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If you can view only one celestial event this month, view this one.

A slowly brightening Mars passes immediately north of the much brighter Jupiter.

1. Look to the east 90 minutes before sunrise on August 13, 14, and 15.
2. Find Mars and Jupiter shining left of the red star Aldebaran. Mars' brightness will nearly match that of Aldebaran.



Binocular View

3. Aim binoculars at Mars and Jupiter.
4. On the morning of August 14, they will be only 20 minutes apart.
5. They will be just 1.5° southwest of the open cluster NGC 1746.
6. A telescope at > 100 power will reveal Mars' tiny red disk and Jupiter's larger disk along with its four Galilean moons.





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Astronomical League Notes

By Mark Smith

Last month, I introduced you to the Astronomical League and some of the resources available. Remember, all the resources are free, and the majority don't require you to be a member to enjoy. This month, I'd like to introduce you to two Astronomical League Observing Programs, one aimed at beginners and one at more advanced observers.

The Universe Sampler program is geared towards people just beginning to explore astronomy and introduces them to a variety of subjects ranging from navigating the night sky, how to judge angular distances, star hopping, and much more before having the observer track down and observe a variety of objects. You don't need a telescope to complete this program and there are sections that must be completed with the naked eye even if you are going to use a telescope to complete the second set of observations. While many of the observations will seem trivial to advanced astronomers, they proved a variety of objects that will serve as an introduction for a novice and will have advanced observers revisiting forgotten gems.

For the advanced observing program how about a variation on the Messier List, a Messier Imaging List. This is exactly what it sounds like. You need to image all 110 Messier Objects. Along the way you need to keep track of the normal types of observing records like date, time, equipment used, seeing, etc., but you also need to submit your images along with your observing records. Many Messier Objects are among those commonly imaged anyway, but there are others that are seldom or never imaged. Many hard-core imagers probably have half or more of this observing program already completed.

If you are interested in what you've read, I invite you to explore what the Astronomical League has to offer and use it to help guide or enrich your astronomy. You may even decide to join the next time you renew your SDAA membership. If you have any questions about the Astronomical League, please don't hesitate to contact me at ALCOR@SDAA.org.



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SDAA Contacts

Club Officers and Directors

President	Dave Decker	President@sdaa.org	(619) 972-1003
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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?

Join the campaign to rid the Newsletter of little boxes by sharing them with the membership. In return for your efforts, you will get your very own byline or photograph credit in addition to the undying gratitude of the Newsletter Editor. Just send your article or picture to Newsletter@SDAA.Org.



San Diego Astronomy Association

NASA Night Sky Notes

August 2024



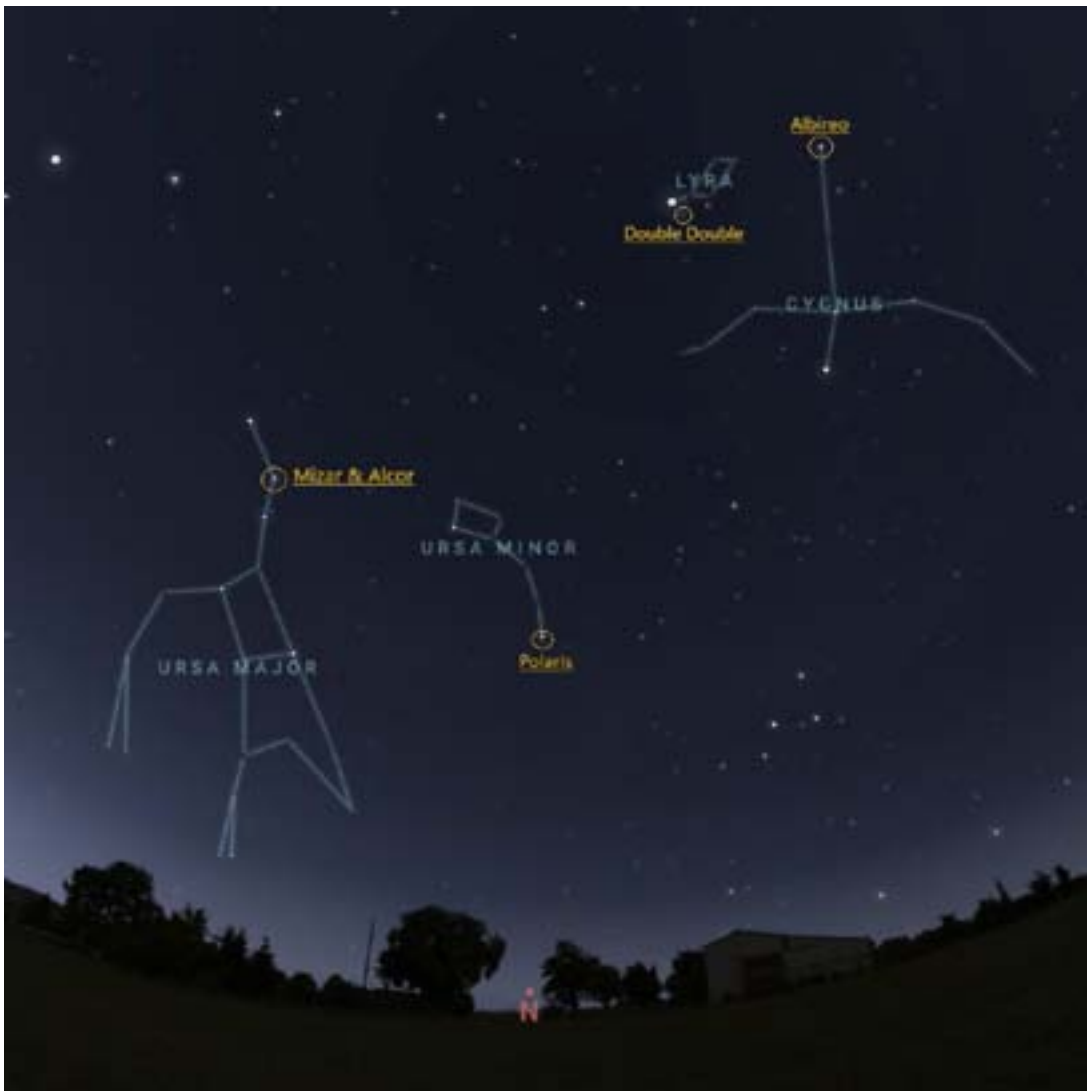
This article is distributed by NASA's Night Sky Network (NSN).

The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

August Night Sky Notes: Seeing Double

By Kat Troche

During the summer months, we tend to miss the views of Saturn, Jupiter and other heavenly bodies. But it can be a great time to look for other items, like globular star clusters such as Messier 13, open star clusters such as the Coma Star Cluster (Melotte 111), but also [double stars](#)!



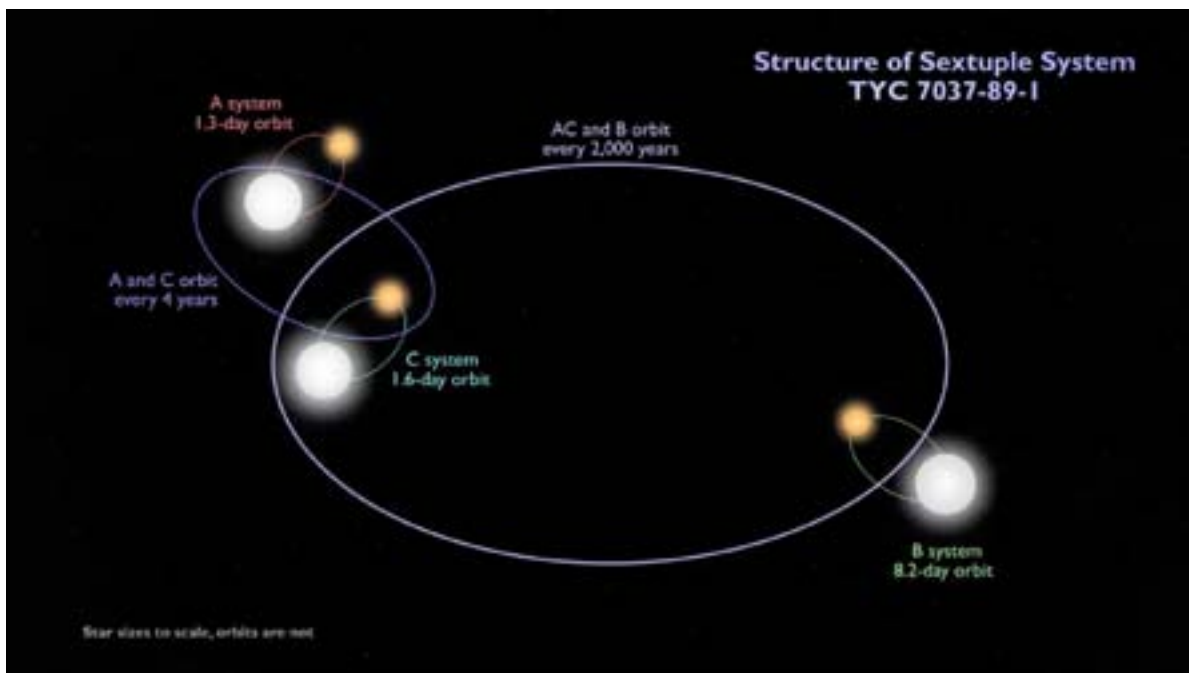
Mid-August night sky constellations with the following multiple star systems highlighted: the Double Double in Lyra, Albireo in Cygnus, Polaris in Ursa Minor, Mizar and Alcor in Ursa Major. Credit: Stellarium Web



What Are Double Stars?

If you have seen any movies or read any books that refer to having two suns in the sky, that would be a *double star system*. These star systems typically come in two types – binary and optical doubles. Binary stars are two stars that are gravitationally bound and orbit each other, and optical double stars only *appear* to be close together when viewed from Earth, but in reality, are extremely far apart from another, and are not affected by each other's gravity. With a small telescope, in moderately light polluted skies, summer offers great views of these stellar groupings from the Northern Hemisphere:

- **Double Double:** also known by its technical name, Epsilon Lyrae, this multiple star system appears as one star with naked eye observing. But with a small telescope, it can be split into 'two' stars. A large telescope reveals Epsilon Lyrae's secret – what looks like a single star is actually a *quadruple* star system!
- **Albireo:** a gorgeous double star set – one blue, one yellow – in the constellation Cygnus.
- **Polaris:** while technically a multiple star system, our North Star can easily be separated from one star to two with a modest telescope.
- **Mizar and Alcor:** located in the handle of the Big Dipper, this pair can be seen with the naked eye.



This schematic shows the configuration of the sextuple star system TYC 7037-89-1. The inner quadruple is composed of two binaries, A and C, which orbit each other every four years or so. An outer binary, B, orbits the quadruple roughly every 2,000 years. All three pairs are eclipsing binaries. The orbits shown are not to scale. Credit: NASA's Goddard Space Flight



San Diego Astronomy Association

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Aside from looking incredible in a telescope or binoculars, double stars help astronomers learn about measuring the mass of stars, and about stellar evolution. Some stars orbit each other a little too closely, and [things can become disastrous](#), but overall, these celestial bodies make for excellent targets and are simple crowd pleasers.

Up next, learn about the Summer Triangle's hidden treasures on our mid-month article on the [Night Sky Network](#) page.



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!

MEMBERSHIP INFORMATION

Send dues and renewals to P.O. Box 23215, San Diego, CA 92193-3215 or renew on-line. The notice that your membership in SDAA will expire is sent by email. Dues are \$60 for Contributing Memberships; \$40 for Basic Membership; \$70 for Private Pads; \$5 for each Family membership.