

San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach



November 2023

Program Meeting November 15th

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

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

Next SDAA Business Meeting

November 14th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting

November 15th at 7:00pm
Mission Trails Regional Park
Visitor and Interpretive Center
1 Father Junipero Serra Trail

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November 2023, Vol LXI, Issue 11

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San Diego Astronomy Association

Incorporated in California in 1963

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Newsletter Deadline

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

Topic: Gadget Night

Bring your astronomy-related or imaging garage-built objects, tools, ideas, new hardware, software to share with SDAA on our traditional Gadget Night – only this year we will have a ZOOM option as well as in-person show and tell. This includes astro-images, views of your home or TDS observatories, videos of telescope equipment, software and neat techniques.



This meeting will be in-person at the Mission Trails Regional Park Visitors Center. The Program meeting begins at 7:00 PM. You can also attend the meeting with Zoom.

You can register in advance for the next Zoom meeting at the following link:

<https://us02web.zoom.us/joining/register/tZMude-sqz4sGN1qXv7qSlBwnYp-gaQEZ8LU>

After registering, you will receive a confirmation email containing information about joining the meeting.

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 *October 10, 2023* – Unapproved and subject to revision

1. Call to Order

The meeting was held via Zoom and was called to order at 7:04pm with the following board members in attendance: Dave Decker, President; Kin Searcy, Vice President; Mike Chasin, Treasurer; Gene Burch, Recording Secretary; Alicia Linder, Corresponding Secretary; Hiro Hakozaki, Director; Gracie Schutze, Director; Bee Pagarigan, Director; Steve Myers, Primary Grid Reconstruction committee; Tom Kennedy, TDS site maintenance committee.

2. Approval of Last Meeting Minutes

The September meeting minutes were approved.

3. Treasurers & Membership Report

Mike reported that the insurance for volunteers has been paid (\$300), the documents for our tax preparation have been sent to our CPA, we've received a SDCCU debit card, moved JSF savings from Chase to SDCCU and we're in the process of setting up a savings account at CFG bank. Mike also said that Chase Bank was served with notice that we intend to file suit over the \$5,000 counterfeit check they cashed against our account. Chase responded and still refuses to reimburse us for the check. We have until the end of October to file a small claims action against Chase and the Board agreed that this is the best course of action now.

Mike reported that he's in the process of implementing several of the recommendations from the Audit committee report including a formal process for counting large amounts of cash (mostly from the Banquet and JSF) and keeping the bank balances low and moving the money into accounts that have higher interest rates.

4. Standard Reports

a. Site Maintenance Report:

Work in progress items:

- TDS Restroom roof damage – Bee reported that Tropical Storm Hillary caused significant damage to the bathroom roof at TDS. After discussion, it was decided to replace the entire roof and fix any damage that may be found. The estimated cost is about \$2,500, which the Board approved. Bee and Steve will proceed and try to get the work done as quickly as possible.
- Ongoing issues with Main Gate lock – we are still having problems with the lock on the main gate at TDS. We discussed the possibility of producing a short video on how to properly lock the gate. We also decided to add a second SDAA padlock to the chain as a backup to the existing lock or in case the SDGE lock is improperly attached as it was a month or two ago. Tom will cut the chain and use the second lock to rejoin it.

b. Observatory:

Observatory is in excellent condition. Weather has been fantastic and we are seeing more activity at the star parties. November 4th: UCSD Astronomy Physics clubs will be in attendance. It is a public star party night. I have the additional staffing arranged.

c. Loaner Scope Report:

Two scopes currently out (SDAA-026, SDAA-031).

No update on the repairs/upgrades for SDAA-027 and SDAA-032 to get them back into rotation. Just need to find some time to get the work done.



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I'm still watching for suitable donations to avoid having to spend club funds to get SDAA-032 ready to loan out. If anybody has a line on a compact all-in-one guide scope+camera (e.g. Orion Magnificent Mini autoguider) that is a significant chunk of what is needed. Also going to need T-rings and/or 2" bayonet mounts for Canon and Nikon bodies. A QHY PoleMaster would be superb. If any of these come up in possible donations, or if any members have a line on discounted/used parts, please let me know.

I need to get my hands on the 10" Dobsonian from the Bill Neis estate and get it integrated into the loaner program. Has there been a decision on the Coronado PST from the Neis estate? I'm interested in including that in the loaner program if it's still available.

d. Private Pad Report:

We had two new people show interest in pads but no new leases. We had no new returned pads. I'm monitoring e-mail for the pads address while on vacation but there hasn't been any activity.

e. Program Meetings Report:

Kin has secured Bill Ochs, NASA Program manager for JWST, as our banquet speaker. He will give a great talk about the many engineering points of failure in the project and how they were successfully dealt with. He will also describe initial science results of JWST.

The November program meeting will be in person at Mission Trails Regional Park and will be our annual "gadget night."

The February program meeting speaker will be Sharon Flemings on Women in Astronomy. She is a TVA member who lives in St Augustine FL and this talk is very relevant.

f. AISIG Report:

Gary Hawkins presented a session on NINA telescope and observatory control software. The session was well received. No plans have yet been made for a meeting in October.

g. Newsletter Report:

All looks great – Thanks, Andrea!

h. Website Report:

Nothing new to report.

i. Social Media:

No report

j. Outreach Report:

During September, we continue to deal with the May Gray & June Gloom, having to cancel some events. SDAA member, Mitchell Walker was on vacation during Stars-in-the-Park, so we didn't have his Stellarium, but still had a good turn-out of SDAA astronomers and the public, plus the audiences from the two Fleet Science Center lectures given by Dr. Lisa Will. Our second visit to Descanso Town Hall was as much fun as the first one a few months ago, people love us there, we were above the coast marine layer, and Jessica Rzeszut, NASA Solar System Ambassador & SDAA member conducted a lecture about Artemis while we were setting up. Saturn was the most popular object later in the evening. The next night was K.Q. Ranch and our last good look at the Milky Way before it disappears in the fall/winter night sky. The campers just love to see the Milky Way and also Saturn popping up in the east soon after sunset. Our events at Mt. Helix Park always inspire members as well as patrons, as we assemble on the plaza around the giant white cross with 360 degree views. This year we shared the views with over 220 patrons as they



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made their way to the top of the hill via trolleys provided by the park. We also provided two presentations to two public libraries in September, La Mesa and Carlsbad Libraries. Woody Schlom headed up the SDAA contingent at La Mesa with a Solar Eclipse lecture and how to view the upcoming partial eclipse on October 14th. Dave Decker and Corey Breininger were outside in the parking lot, showing people the Sun threw their solar scopes. Meanwhile on the same day, Dennis Ammann presented at PowerPoint about how telescopes work and their history to 20 young children and their parents.

2023	Previous Total	September	YTD
Completed	51	8	59
Canceled	30	4	34
Total Attendance	4476	699	5175

k. TARO Report:

TARO is operational and accepting target requests. We've found a few interesting bugs in the updated software and continue troubleshooting these issues as they are uncovered.

l. Cruzen Report:

The first "official" training session took place on September 16. We had 19 members request training; 12 appeared at the September 16 training event. The training session went very well, with a good amount of hands-on experience with both telescopes for all. The Gemini-2 control system had to be reset and reconfigured; it was not pointing properly when we first booted it up. Hopefully this is not a persistent issue, as this has already happened twice to me, despite replacing the SRAM backup battery.

I believe somebody must have quietly done some work on the Schaefer mount, because the RA axis was already firmed up when I arrived on the 16th. Tracking even at the meridian was working well, so I think we're good there.

Five nights in October and November have already been reserved by our new Cruzen-certified members.

The next Cruzen training session will be in February or March.

m. Merchandise Report:

We sent out an email blast seeking new merchandise orders. We "pre-sold" quite a few shirts, hoodies and knit caps (beanies). We also were able to re-stock the online store and overall should net about \$600 for the club. The shirts should be in around mid-October.



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- n. Astronomical League Report:
Nothing new at this time.
- o. JSF Report:
Proposed Date: August 2, 3 is the proposed date for the 2024 edition of Julian StarFest. New moon will occur on August 4th.
Observatory Tour: I would like input from the board as to what observatory to visit in 2024, Laguna or Palomar.
Web Site: I would like to work with Jeff to see if we can implement some changes to the JSF website such as the following:
1. On website, indicate there is a deadline for registration, on RV, camper, tours at least one week before scheduled date. Also, price increases one month before the event to encourage early registration.
 2. On website, indicate the number of spaces still available like a countdown for all categories. .
 3. Clarify what is a car, tent, RV size class A,B,C, teardrop, van, 5th wheel and what categories for registration they would fall into.
 4. Preregistration is required for observatory tour.
- Volunteers: I will be contacting previous year's volunteers to see if they would be willing to assist in the early planning stages.
- p. Primary Grid Reconstruction Report:
TDS Grid - design work continues. A scalable scope of work is being developed that will hopefully give the new contractor, Robinson Electric, a better idea of the project scope, as well as options for contract negotiation.

5. Old Business:

- | | | |
|----|--|-----------|
| a. | Audit Committee Follow-up - See Treasurer's report | Chasin |
| b. | Lawsuit status - See Treasurer's report | Chasin |
| c. | SDAA Sticker Concept | Pagarigan |
| | - Bee is still working on the designs for SDAA stickers and plans to place an order sometime next month with the goal of having the stickers available at the Banquet. | |
| d. | SDGE Fuel Mitigation Letter | Pagarigan |
| | - was discussed last month and agreed to have SDGE do the work. | |
| e. | Other old business | Decker |
| | - reminder that the Fall BBQ is set for November 11 th . | |

6. New Business:

- | | | |
|----|---|--------|
| a. | We need a nominating committee for next year's Board of Director openings | Decker |
| | Gene agreed to head the committee and have nominees available for the November membership meeting. | |
| b. | Mike suggested that we redesign the SDAA logo (mostly used on our letterhead. Bee will take a look and see what she can do. | |

7. Adjournment: The meeting was adjourned at 9:18pm.

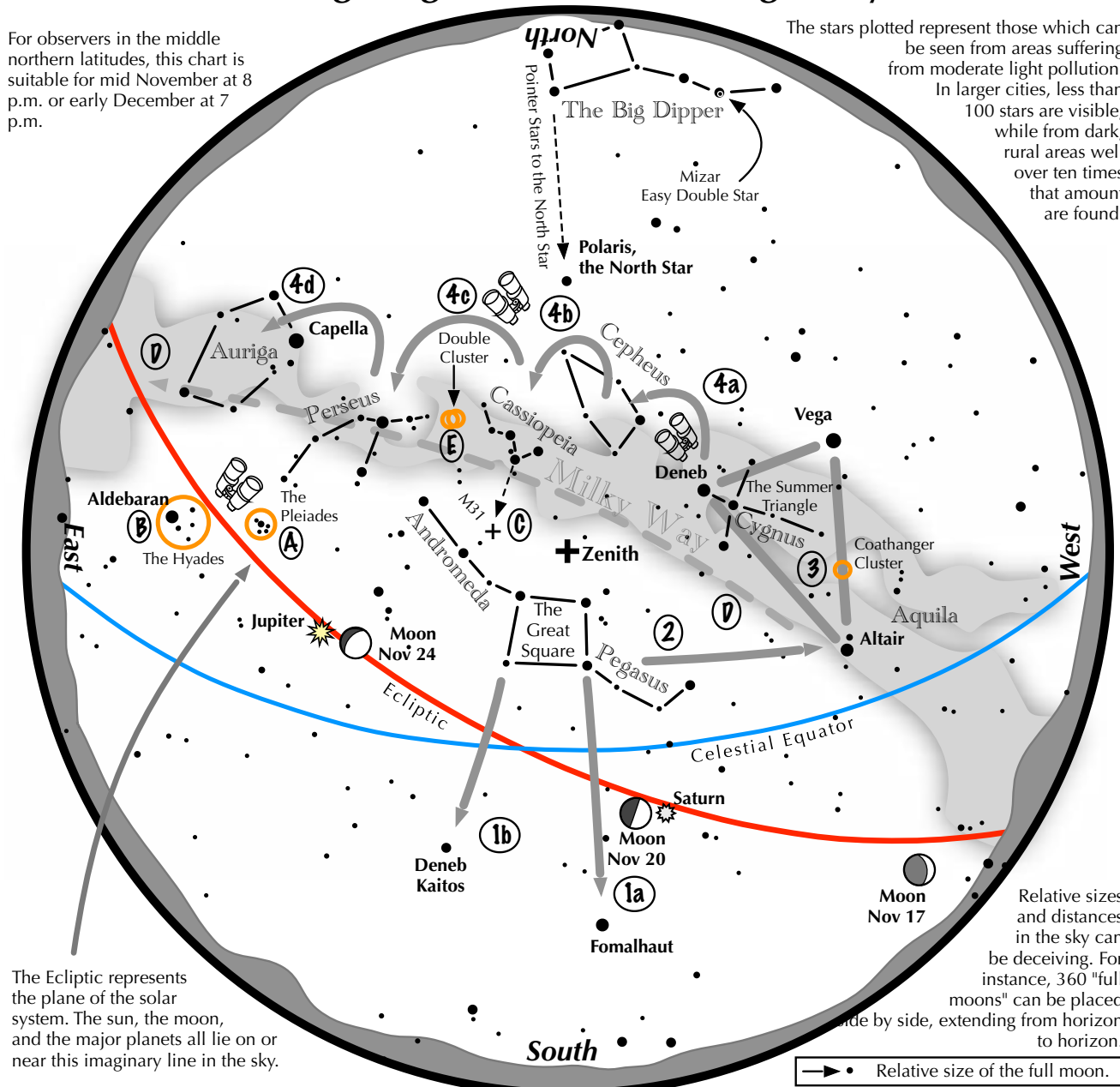


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Navigating the November Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid November at 8 p.m. or early December 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.

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

- 1 Face south. Almost overhead lies the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend a line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the south. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second brightest star in the south.
- 2 Draw a line westward following the southern edge of the Square until it strikes Altair, part of the "Summer Triangle."
- 3 Locate Vega and Deneb, the other two stars of the Summer Triangle. Vega is its brightest member, while Deneb sits in the middle of the Milky Way.
- 4 Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, then to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas. **E:** The Double Cluster.



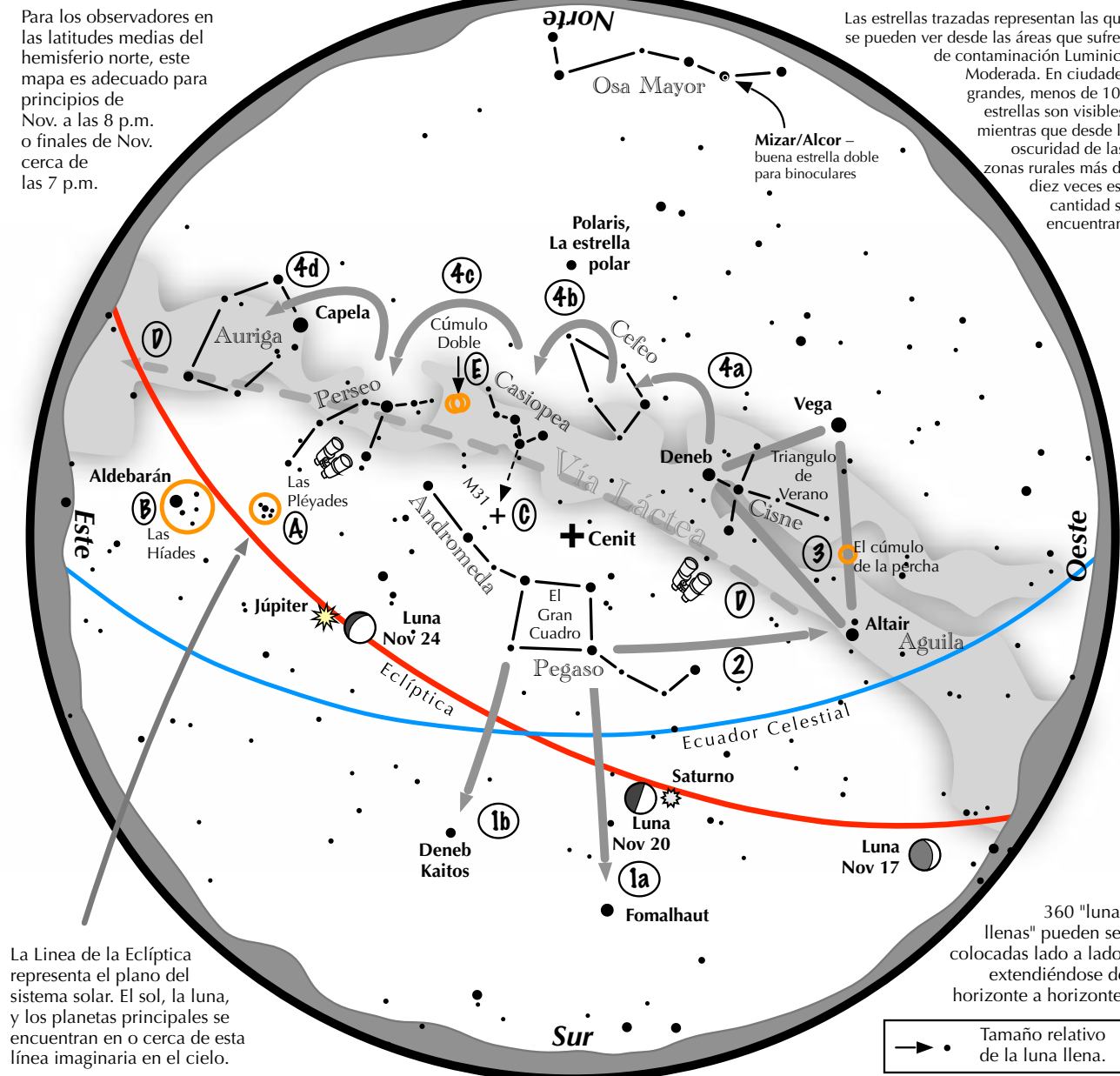


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Navegando por el cielo nocturno de Noviembre

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

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 Hacia el sur. Casi arriba está el "Gran Cuadro" con cuatro estrellas con el mismo brillo que las de la Osa Mayor. Extiende una línea imaginaria hacia el sur siguiendo las dos estrellas más occidentales del Gran Cuadro. La línea lleva a Fomalhaut, la estrella más brillante del sur. Una línea que se extiende hacia el sur desde las dos estrellas más orientales, lleva a Deneb Kaitos, la segunda estrella más brillante del sur.
- 2 Dibuja otra línea, esta vez hacia el oeste siguiendo el borde sur del Gran Cuadro. Lleva a la estrella Altair.
- 3 Ubique a Vega y Deneb, las otras dos estrellas del "Triángulo de verano." Vega es su miembro más brillante, mientras que Deneb se localiza en el medio de la Vía Láctea.
- 4 Salta a lo largo de la Vía Láctea desde Deneb hasta Cefeo, que se asemeja al contorno de una casa. Continúa saltando a la "W" de Casiopea, a Perseo y finalmente a Auriga con su brillante estrella Capela.

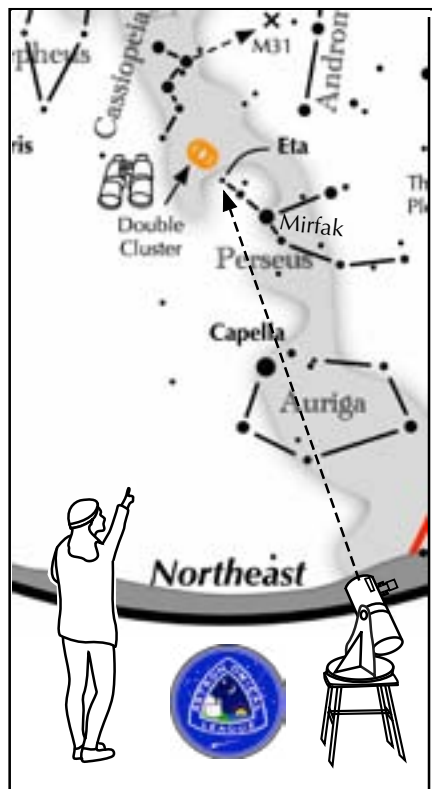
Destacan con Binoculares. A y B: examina las estrellas de las Pléyades y las Híades, dos cúmulos de estrellas a simple vista. C: Las tres estrellas más occidentales de la "W" de Casiopea apuntan hacia el sur hasta M31, la Galaxia de Andrómeda, un óvalo "borroso." D: Barrer a lo largo de la Vía Láctea desde Altair, pasar Deneb, a través de Cefeo, Casiopea y Perseo, y luego a Auriga por muchos intrigantes cúmulos de estrellas y áreas nebulosas. E. Cúmulo Doble de Perseo.





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ASTRONOMICAL LEAGUE Double Star Activity



Other Suns: Eta Persei

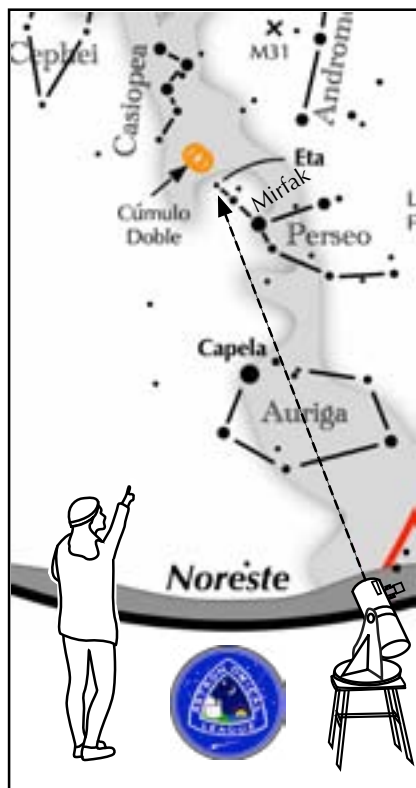
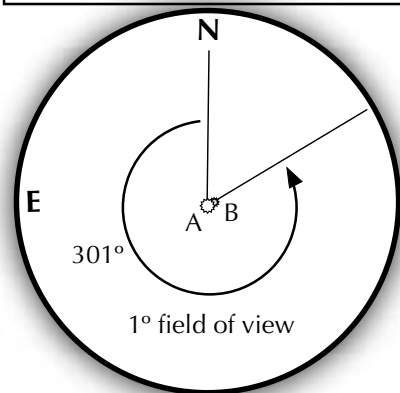
How to find Eta Persei on a November evening

Face northeast. Between bright Capella and the "W" of Cassiopeia, is the constellation Perseus. Eta Persei is not quite mid way between Mirfak, the brightest star in Perseus, and the eastern edge of the "W." It lies close to the Double Cluster.

Suggested magnification: 40x
Suggested aperture: >3 inches

Eta Persei

A-B separation: 28 sec
A magnitude: 3.8
B magnitude: 8.5
Position Angle: 301°
A & B colors:
yellow, blue



Otros Soles: Eta Persei

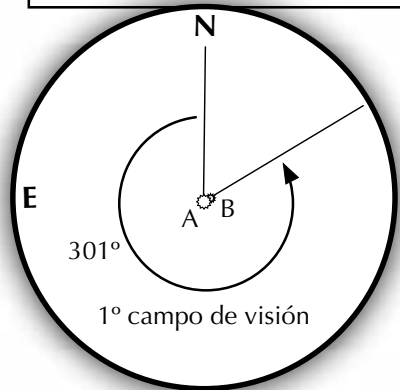
Cómo encontrar a Eta Persei en una tarde de noviembre

Mira al noreste. Entre la brillante Capella y la "W" de Casiopea, se encuentra la constelación de Perseo. Eta Persei no está a mitad de camino entre Mirfak, la estrella más brillante de Perseo, y el borde oriental de la "W". Se encuentra cerca del Cúmulo Doble.

Ampliación sugerida: >40x,
Apertura sugerida: >75 mm

Eta Persei

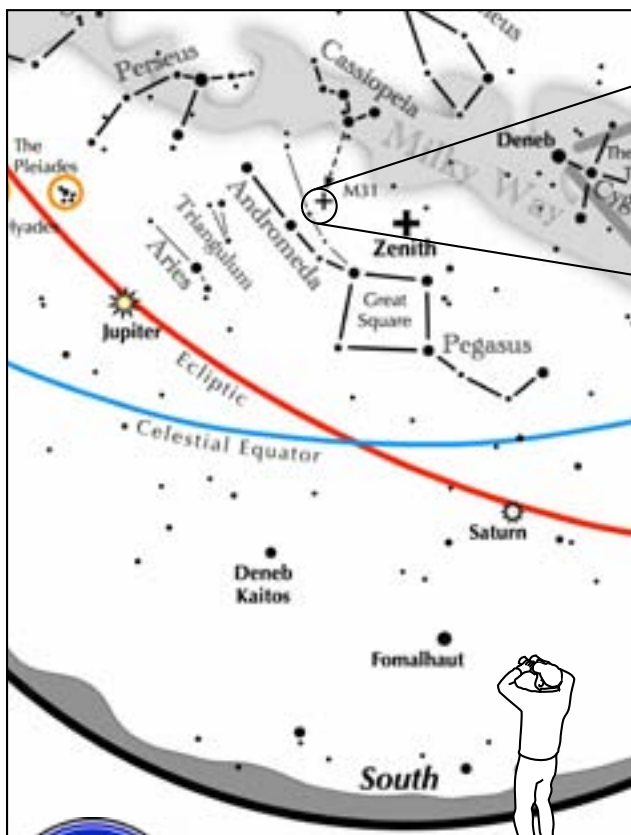
A-B separación: 28 sec
A magnitud: 3.8
B magnitud: 8.5
PA: 301°
A & B color:
amarilla, azul





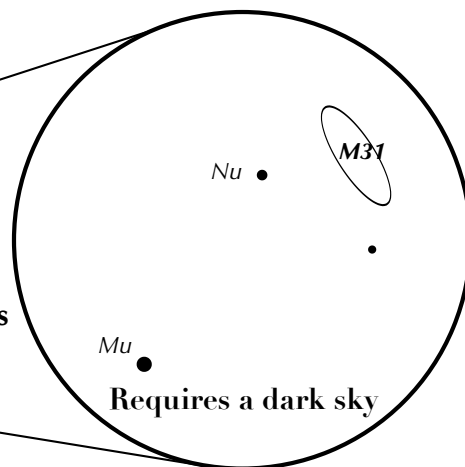
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If you can observe only one celestial event this month, consider this one:



**South
90 minutes after sunset**

View
through
10x50 binoculars



Have you seen M31, the Andromeda Galaxy?

Look high in the south 90 minutes after sunset in November.

- Find the Great Square nearly at the zenith.
- Identify the line of four stars beginning at the northeast corner of the Great Square and extending northeast.
- Identify a second but dimmer line extending more northeasterly than the first line. These two lines represent Andromeda.
- Identify the third star on each line.
- A line passing through those two stars and extending northwest for the same length lands on M31.

or ...

- Draw an arrow pointing southward through the three westernmost stars of Cassiopeia's "W."
- Extend that line for the same length as Cassiopeia is wide.
- It ends on M31.



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November 2023 Another Look

Dave Phelps

Cassiopeia

The new moon In November is on 11/13 at 0127 PST.

The full moon is on 11/27 at 0116 PST.

November is the Full Beaver Moon. Other Native American names include the Deer Rutting Moon, the Digging/Scratching Moon, the Freezing Moon and the Whitefish Moon.

We also have the First Snow Moon, the Little Winter Moon and in Great Briton, the Moon before Yule.

There are two lunar occultations this month. Neither of which is visible In the US. Venus will be occulted on 11/09 beginning at 0058 PST. Its totality extends from Greenland through Europe, so we should get a nice close approach. On 11/28 is a daytime eclipse of β Tauri beginning at 0840 PST. Totality is in the South Pacific and Chili.

In French Its Pleine Lune de Novembre, In German, November Vollmond, in Spanish its Noviembre Luna Llena and in Greece its Νοέμβριος Πανσέληνος, Noémvrios Pansélinos

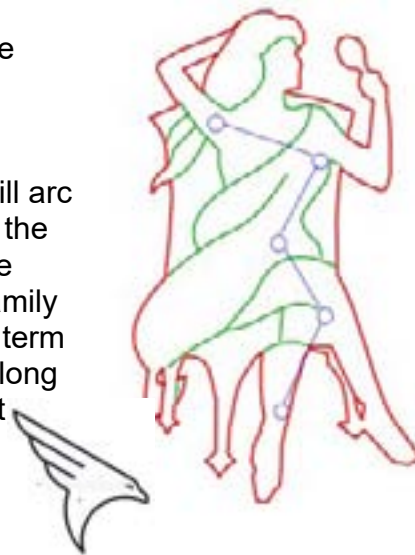
Cassiopeia

That starr'd AEthiop Queen that strove
To set her beauty's praise above
The Sea-nymph
Milton "Il Peneros

Over the next months, a family of related constellations will arc across the night sky. There is Cassiopeia, the Queen, Cepheus, the King, Andromeda, the Princess, Perseus, the Hero, Pegasus, the Flying Steed and Cetus, the Sea Monster, all part of the same family of legends. Cassiopeia is the Queen of Aethiopia, a generalized term for inhabitants of that part of Africa above the great desert and along the Red Sea, the beginning of the end of the known world at that time. Beautiful and vain, she is typically shown seated on a throne, legs crossed, holding her long hair in her right hand and a sheaf of wheat in her left; although through time and artist, the images vary. She claimed she was more beautiful than the sea nymphs and even compared her beauty to the goddess Juno. Well, you can just imagine how they took that. So, this guy Nereus has 50 daughters, all nymphs, and they came down on him all at once. Worse, one of those daughters, whose name was Amphitrite, was married to the sea-god Poseidon. Wonder what that wedding cost and he had another 49 to go? Poseidon agrees to wack this kingdom to appease his wife and sisters-in-law. He sends a sea monster, Cetus, to ravage the coast of Aethiopia and eat the populace. The legends then begin to blend. Cassiopeia and Cepheus, following the advice of an Oracle, chain their daughter, Andromeda, to a rock as an appetizer for Cetus to appease the gods and Nereides. Perseus, the hero, flies to save her, killing Cetus and winning Andromeda for his bride.



Cassiopeia by Helvius



Centuries earlier, Greece saw the asterism as the "Laconian Key":



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*Not many are the stars nor thickly set
That, ranged in line, mark her whole figure out.
But like a key that forces back the bolts
Which kept the double door secured within
So shaped her stars you singly trace along.* Aratos

The Eskimos imagine that α , β , and γ Cassiopeiae, three stars forming an isosceles triangle, represent the three stones supporting a celestial stone lamp. They call the constellation "Ibrosi"..



In other countries, the Arabians called Cassiopeia, "Al Dhat al Kursiyy", the Lady in the Chair, but earlier had one of her hands tattooed with henna. Other Arab designations includes two dogs or a deer made out the stars of Cassiopeia and Cepheus. To the Celts and the early Brits, she was the house of Don, the king of the fairies and to the Chinese, a Charioteer.

That one
White stain of light, that single glimmering yonder,
Is from Cassiopeia, and therein
Is Jupiter—

In Persia, she was drawn as a queen holding a staff with a crescent moon in her right hand, wearing a crown, accompanied by a kneeling dromedary. In India, she is a princess and her story is also of a beautiful victim and a hero to rescue her.

In ancient Egypt. The W asterism, which has through history depicted a chair, may have been seen as the throne of Osiris and, also, in the Egyptian "Book of the Dead", it was called the "Leg":

"Hail, leg of the northern sky in the large visible basin."

One school of thought claims the original story of a queen is from Phoenicia, holding a sheaf of wheat, from at least 3500 years ago; or the Assyrian Lady of the Corn, 4000 years ago, and still others have her sharing responsibly with Virgo for the seed, the grain and the harvest.

There is a lot of great stuff in Cassiopeia. Burnham lists 74 variable stars and 151 double and multiple stars. He also lists 26 open clusters, 6 diffuse nebula, 2 planetary nebula and 3 galaxies. Cassiopeia also has 199 stars 7th magnitude and brighter, 20 of which are brighter than 5th magnitude. She has over 200 binocular and deep sky objects and several of her planetaries are in the 14+ range

Cassiopeia is an ideal constellation to get your feet wet in observational astronomy. It is a great constellation to use to gain some experience with our 4.25 and 6 inch reflectors, 3 inch refractor's and 7x50



binoculars. With these optics, we can reach 11th or 12th magnitude

The two Messier's in Cassiopeia are M52, the right hand image and M103, the left hand image. They are both open clusters, both bright at 6th and 7th magnitudes, though on opposite sides of the W. In the same field as M103 is NGC 7635, the Bubble Nebula. It is 10th magnitude, so it will be visible in your scope.



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If you have, or if you can borrow a “UHC” that is an Ultra High Contrast filter, the Bubble will be more visible. The Bubble and M103 are also great targets of your Equinox type telescope/camera.

There are six Caldwell objects in Cassiopeia. Caldwell objects were compiled by a British gentleman named Patrick Moore who thought he would put together a list to place beside Messier; additional bright objects easy for the amateur to spot. In Cassiopeia, he listed 3 open clusters, 2 “dwarf spherical galaxies” and C11, which you have already met next to M103. Caldwell 8 and 10 are a little fainter open clusters along the line between delta δ and epsilon ϵ , the flat arm of the W. Learn

your Greek alphabet, it will make your life easier. C8 is the right hand image, about 9th magnitude and C10 is the left image, magnitude 7. C13 is quite pretty, easy to find and bright at 6th magnitude.

C13 by <https://ocastronomers.org/wp-content/uploads/2018/12/NGC457-m25-15x340s-011s.jpg>

M52&103 by https://ocastronomers.org/wp-content/uploads/2018/12/Buble-Nebula-and-M-52-LRGB_.jpg

and M103oc_ <https://ocastronomers.org/wp-content/uploads/2019/01/m103.jpg>

C8, NGC 559 by William Maxwell [https://www.astrobin.com/vm6jg7/?q=ngc 559](https://www.astrobin.com/vm6jg7/?q=ngc%20559)

C10, NGC 663 by Dr. Dimitrii Paniukov [https://www.astrobin.com/nnv1vb/?q=ngc 663](https://www.astrobin.com/nnv1vb/?q=ngc%20663)



C17 and C18 are completely different animals. Known as NGC 147 and NGC 185, left to right in the image, they are dwarf galaxies, members of the Andromeda galaxy family, but should be objects you can find.

Dwarf galaxies are cool, usually close to us, usually a little weird and odd shaped and usually with low surface brightness. That means that a 9th magnitude galaxy is spread across your field of view. Looking out of the corner of your eye, we call that averted vision, will help the image pop into view. Additionally, these two galaxies are only 10 minutes of arc apart, you might be able to pick both out in the same field, like this great astrophotograph by Hannes Bachleitner @ [https://www.astrobin.com/oc4oj7/?q=ngc 185](https://www.astrobin.com/oc4oj7/?q=ngc%20185).



While in that area, close to C17 and 18 is NGC 278, also a satellite galaxy of M31, the Andromeda galaxy. NGC 278 is 11th magnitude, maybe at the limit of your scopes ability, but, a full face on spiral with sort of fluffy spiral arms.


<https://www.astrobin.com/52t9o0/E/?nc=all>





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This month, Cassiopeia is between us and the north pole, meaning if you stand looking north, the Milky Way runs left to right, we see Cygnus and Lyra to the west and Cassiopeia

is in her lopsided  **M** shape. The bottom

right hand star as we see it is epsilon ϵ , whose name is Segin. Segin is a nice whitish 3rd magnitude star that I want you to use as a placeholder. A couple of telescope fields to the right (east) of Segin are two beautiful nebula/cluster objects called the Heart and Soul nebula. They are 6th magnitude, so you will find them with ease. If you still have that UHC filter, be sure to use it.

Check out APOD for February 14, 2023; IC's 1848 & 1805 are the featured image. Challenge yourself a little and try to pick out a few of the objects associated with these two nebula. Clustered around the Heart is Markarian 6, IC 1795, the Fish Head, IC 896 and IC 1027. Around the Soul are IC 1871 and Collinder's 33 & 34. Use your star chart as a guide. If you would like a good one, free, you can download Deep Space Hunter Atlas at:

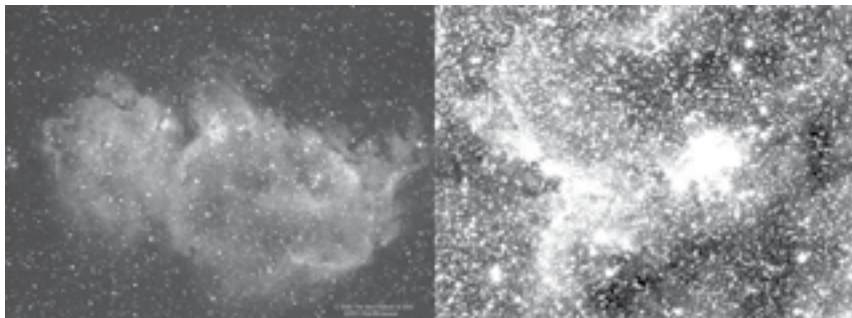
<https://www.deepskywatch.com/deep-sky-hunter-atlas.html>. Good Hunting

<https://ocastronomers.org/wp-content/uploads/2018/12/Final-IC1848-The-Soul-Nebula-in-SHO-Narrowband-1200.jpg> / https://ocastronomers.org/wp-content/uploads/2018/12/IC-1805-R_195m_G_143m_B_88m.jpg

There are many fine books out there for the novice and even the expert astronomer. Look for *Deep-Sky Wonders* by Walter Scott Houston. You can find a PDF version online. Scotty had a lot of recommendations for the middle of November, many of which are already listed. Study the chart and look for a stream of open clusters flowing away from β , named Caph, on the other side of the **M**. These OC's are 7790, 7788 Frolov 1, Berk 58, Harvard 21 King 12 and King 21. All together they are quite a sight.

Then look for open clusters around β , γ , and κ . NGC's 129, 133, 225 and 146. Above the center of the **M**, near Caldwell 13 is a partner cluster, NGC 436. Caldwell 13's IAU name is NGC 437. The top star on the **M** is α and very close is another nice open cluster nick-named the "Pacman". Over by ρ (rho) is "Caroline's Rose", NGC 7789. Named after the great Caroline Herschel, the Rose is a very rich open cluster, with lanes and spirals visually but resembling in astrophotos a loose globular.

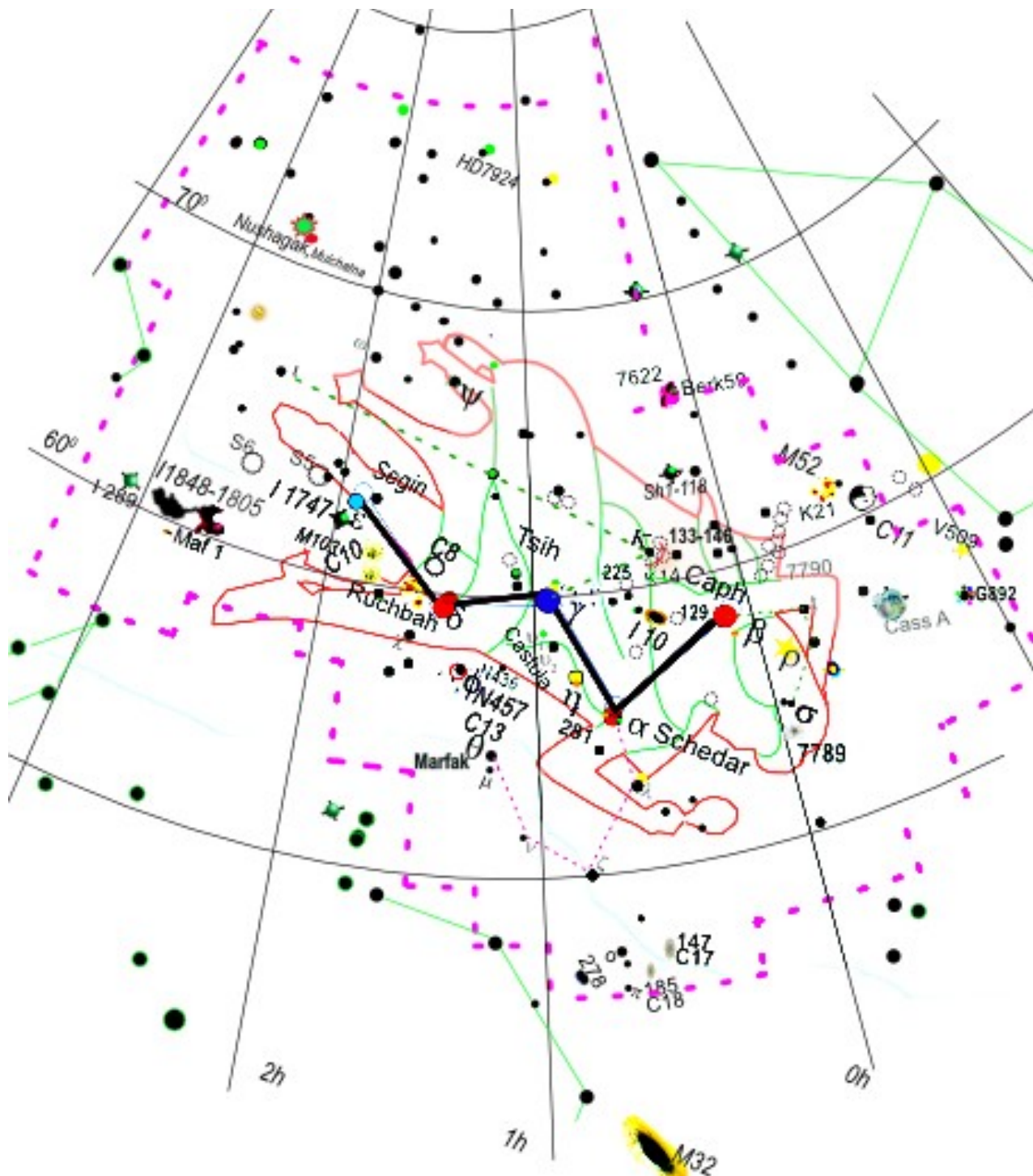
[https://www.astrobin.com/134259/?q=ngc 7789](https://www.astrobin.com/134259/?q=ngc%207789)





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Going across the top of the **M** from right to left the names of the stars are Segin, Ruchbah, Gamma, sometimes called Navi, Schedar and Caph. Gamma γ is very interesting. It has 3 companions, only one of which can be seen, but **D**, the third of the companions has 3 companion of its own. In China, gamma's name is Tsih, the Whip. North in Cassiopeia is Nushagak. Nushagak is an Alaskan name for an 8th magnitude star with a very large planet named Muchatna. Nushagak is a river in Alaska and Mulchatna is one of its tributaries. A little further north in Cassiopeia is a star named HD 7924. It is kind of orangish and has three planets, all in the habitable zone. BASA has a lot of interesting things to say about HD 7924b, a huge extrasolar planet.





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You will find it a very satisfying if you decide to search for the supernova remnant Cassiopeia A. It is quite famous and should be visible in your 6 inch with really dark sky's. Sky and Telescope magazine published one astronomer's search for Cass A. at <https://skyandtelescope.org/observing/cas-a-supernova-remnant/>

Last month, on October 14, the National Park Service held the annual Night Sky star party at Sky's the Limit in Joshua Tree. 500 people were registered and it seems like most of them peeked through my little 60mm refractor at Jupiter and the Pleiades. We had astronomers from Riverside, San Diego, Temecula, Los Angeles, Orange County, Tucson and one even flew in from Singapore. Visitors came from all over the US, and, a fine time was had by all. I just want to say thank you and
Dark Skys Dave

Available now! Immediate delivery!

Exploring the Moon with Robert Reeves

Observing and Understanding our Natural satellite

Written and illustrated by *Robert Reeves*

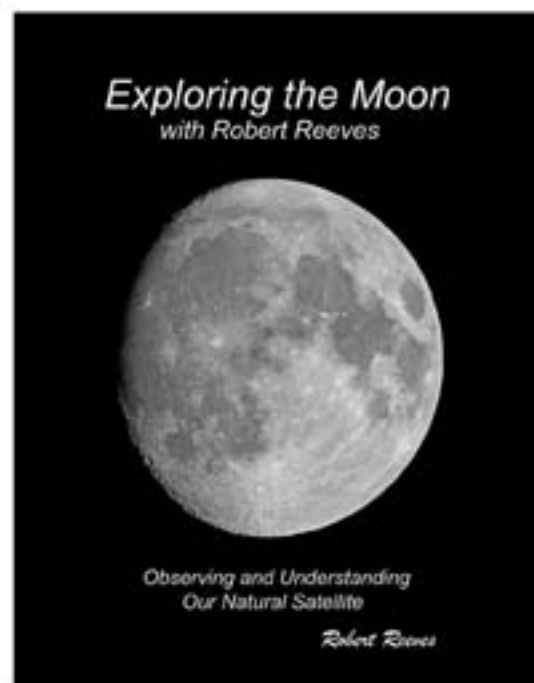
The Moon is a perfect urban backyard target for your telescope, visible most of the month and unaffected by light pollution. Through dozens of issues of Amateur Astronomy Magazine, Robert Reeves showed us that a look at the Moon through a telescope is much an exercise in cosmic art as it is science.

In his new book *Exploring the Moon with Robert Reeves*, Robert helps the reader appreciate the Moon's beauty as well as the science of the Moon. Robert helps us see the Moon as both a mysterious world puzzled over in the past and a world full of promise for future exploration. Robert explains the nuances of the Moon and its varied geology to bring context to its face and give the Moon a personality, and making the Moon a valued nighttime friend.

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Contact robertreeves400@gmail.com for information about signed copies





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Free older Meade 8" reflector telescope on heavy base and free extra new 8" telescope mirror. Need to pick up in Del Mar area. blhanleysull@gmail.com



Nightfall Star Party & Imaging Conference

When & Where
November 9 – 12, 2023
Palm Canyon Hotel & RV Resort
221 Palm Canyon Dr.
Borrego Springs, CA 92004

Reservations
Highway West Vacations
(805) 691-8086 (9:00 AM – 4:00 PM PT)

<http://nightfallstarparty.com/>



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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.



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NASA Night Sky Notes

November 2023

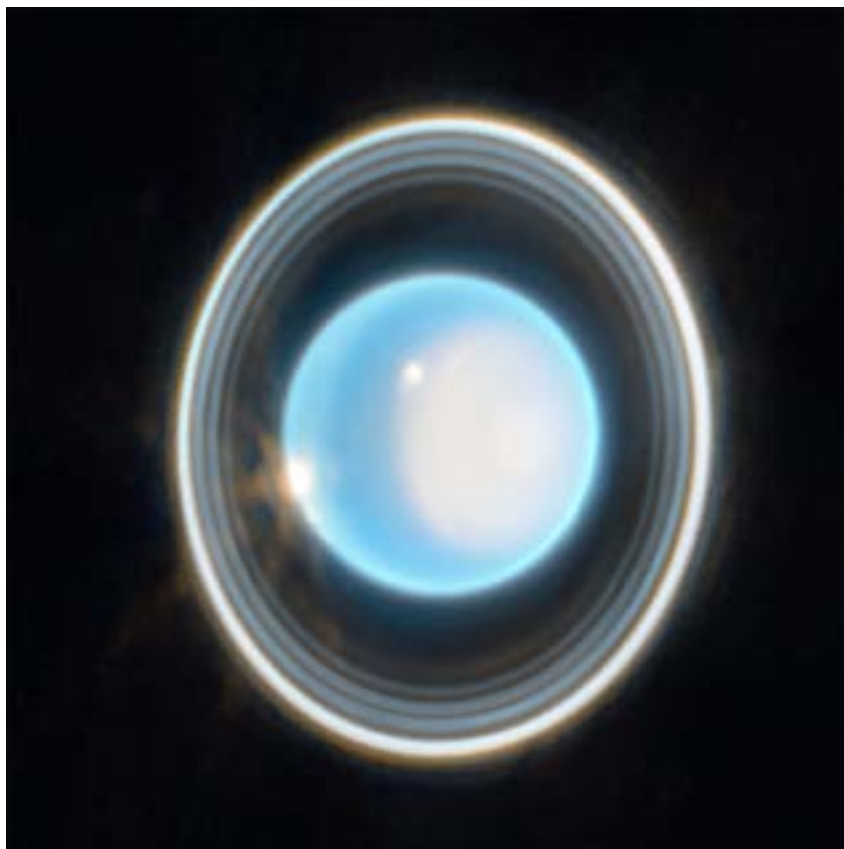


This article is distributed by NASA's Night Sky Network (NSN).

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!

Spy the Seventh Planet, Uranus

By Liz Kruesi



You might be familiar with Saturn as the solar system's ringed planet, with its enormous amount of dust and ice bits circling the giant planet. But Uranus, the next planet out from the Sun, hosts an impressive ring system as well. The seventh planet was the first discovered telescopically instead of with unaided eyes, and it was astronomer extraordinaire William Herschel who discovered Uranus March 13, 1781. Nearly two centuries passed before an infrared telescope aboard a military cargo aircraft revealed the planet had rings in 1977.¹

Since that discovery, multiple observatories have revealed more details of Uranus and its ring system. Most recently, the NASA-led JWST space observatory captured the planet and its rings in detail. This recent image combines just 12 minutes of exposure in two filters to reveal 11 of the planet's 13 rings. Even some of the planet's atmospheric features are visible in this image.

¹ For more about the infrared scope, <https://web.archive.org/web/20230429120852/https://www.nasa.gov/vision/universe/watchtheskies/kui-per.html>



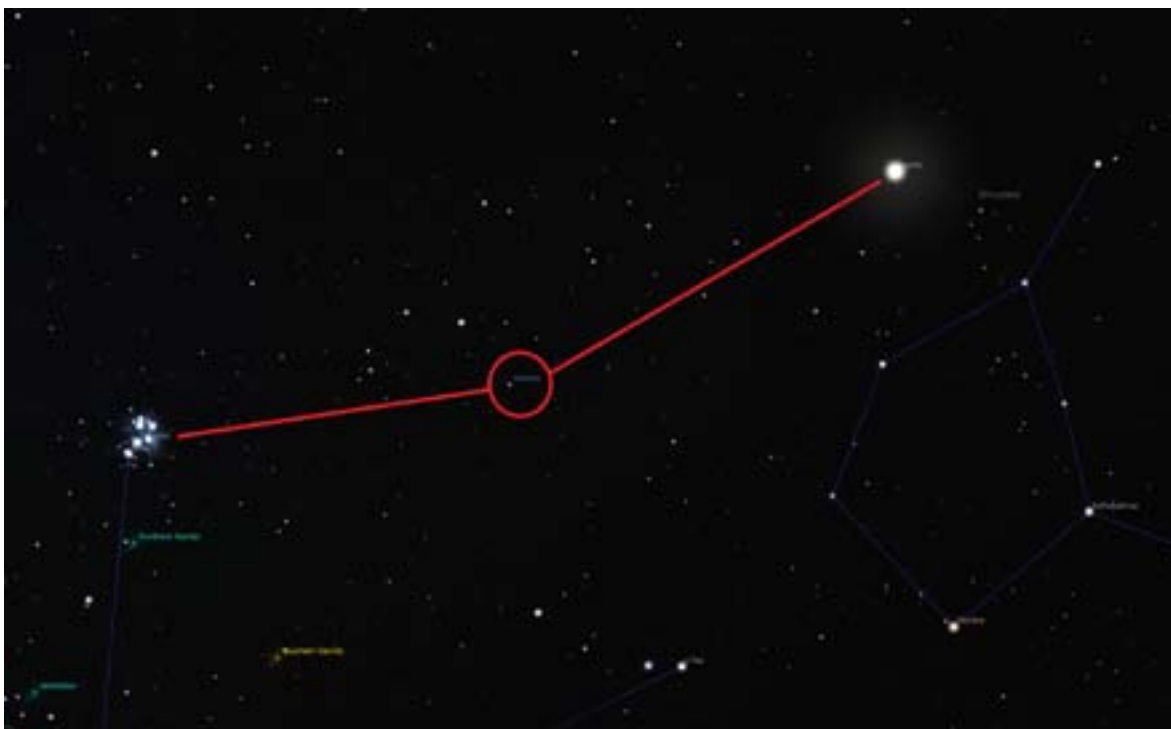
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NASA Night Sky Notes

November 2023

Even with advanced imaging like that from JWST, much of Uranus remains a mystery, including why it orbits the Sun on its side. This is because only one spacecraft has ever visited this planet: NASA's Voyager 2, which flew by the distant planet in the mid-1980s.²

Planetary scientists are hoping to change that soon, though. Scientists recommended in a [report](#) released last year from the National Academies of Sciences, Engineering, and Medicine that Uranus be the focus on the next big planetary science spacecraft mission. Such a large-scale mission would gain insight into this icy giant planet and the similar solar system planet, Neptune.



Sky map picturing M45, Uranus and Jupiter, Stellarium

If you want to catch a view of Uranus with your own eyes, now is prime time to view it. This ice giant planet lies perfectly positioned in mid-November, at so-called “opposition,” when its position in its orbit places it on the other side of the Sun from Earth. That location means our star’s light reflects off Uranus’ icy atmosphere, and the planet appears as its brightest.

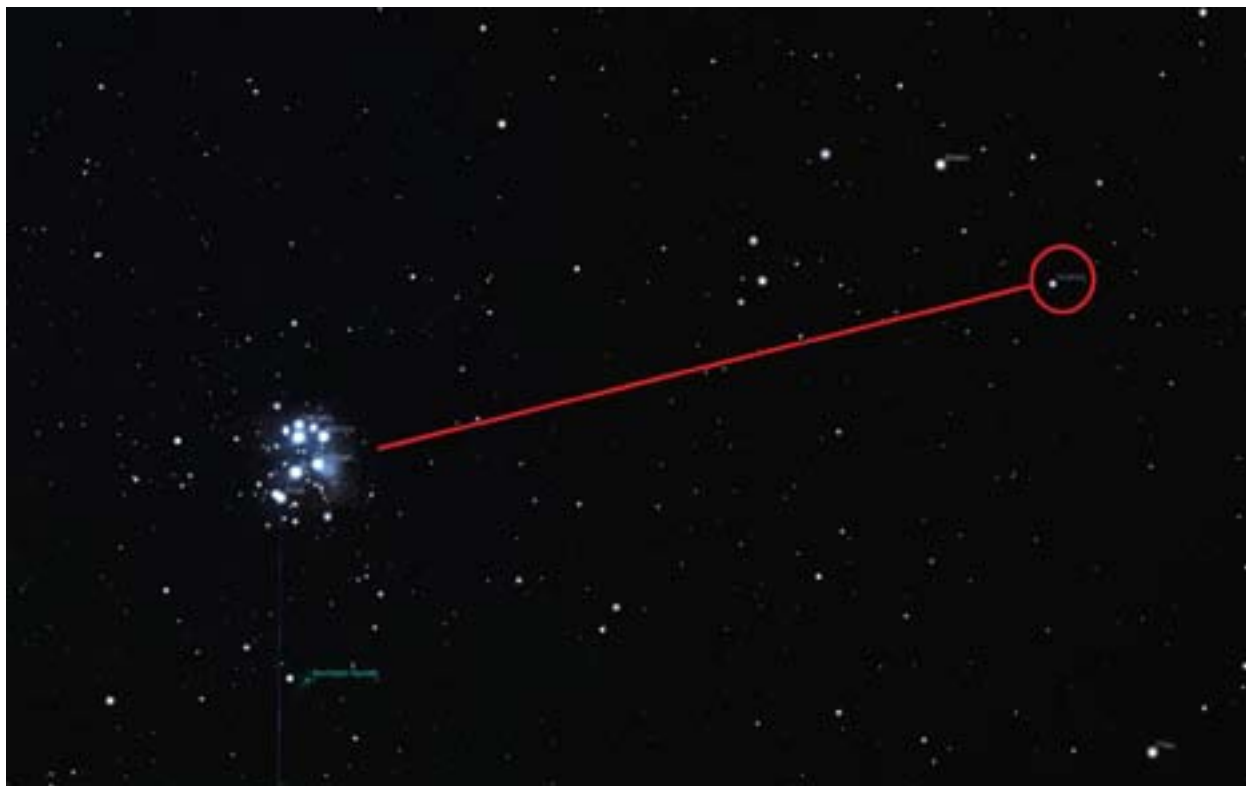
² See more about the flyby at <https://www.nasa.gov/history/35-years-ago-voyager-2-explores-uranus/>



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NASA Night Sky Notes

November 2023



Sky map picturing M45 and Uranus, Stellarium

To find it, look overhead just after midnight on November 13. Uranus will lie about halfway between the brilliant planet Jupiter and the diffuse glow of the Pleiades star cluster (M45). While Uranus may look like a bright blinking star in the night sky, its blue-green hue gives away its identity. Binoculars or a telescope will improve the view.

For more about this oddball planet, visit NASA's [Uranus page](#).

Image 1:

Uranus hosts 13 faint rings, 11 of which are visible in this JWST image. The planet was 19.67 times the Earth-Sun distance from our planet (1.83 billion miles) when JWST captured exposures through two near-Infrared filters on February 6, 2023. The white region in the right side of Uranus is one of the planet's polar caps. This icy world orbits the Sun differently from the rest of the solar system's planets – Uranus rolls along on its side.

[NASA, ESA, CSA, STScI; Image Processing: Joseph DePasquale (STScI)]



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2023 TDS Star Party Schedule

Date	Type	Sunset	Astro. Twi.	Moonrise(set)	Closing	Illum. [†]	Hosts
1/14/2023	Public	5:04 PM	6:31 PM	12:21 AM		55.6%	Kin Searcy & Ed Rumsey
1/21/2023	Member	5:10 PM	6:36 PM	7:52 AM		0.2%	Sara Brown & Patrick Dugan
2/11/2023	Public	5:30 PM	6:53 PM	11:14 PM		72.0%	Per Martin
2/18/2023	Member	5:36 PM	6:59 PM	6:23 AM		3.7%	Igor von Nyssen & Rumsey
3/18/2023	Member	6:58 PM	8:20 PM	5:55 AM		12.6%	Steven Myers
3/25/2023	Public	7:03 PM	8:26 PM	(11:40 PM)		20.9%	Ed Rumsey & Joe Fox
4/15/2023	Member	7:18 PM	8:44 PM	4:29 AM		24.8%	Jerry Hilburn
4/22/2023	Public	7:23 PM	8:51 PM	(10:27 PM)		8.6%	Ed Rumsey & Dave Decker
5/13/2023	Public	7:39 PM	9:13 PM	3:03 AM	10:30 PM	38.5%	George Sarabia
5/20/2023	Member	7:43 PM	9:20 PM	(9:14 PM)	10:30 PM	1.6%	Jerry Hilburn
6/10/2023	Public	7:56 PM	9:37 PM	1:36 AM	11:00 PM	52.8%	
6/17/2023	Member	7:58 PM	9:40 PM	(8:03 PM)	11:00 PM	0.3%	Bob Roth
7/8/2023	Public	7:59 PM	9:39 PM	12:07 AM	11:00 PM	67.3%	Per Martin
7/15/2023	Member	7:57 PM	9:35 PM	4:36 AM	11:00 PM	3.9%	Igor von Nyssen
8/12/2023	Public	7:36 pm	9:06 PM	3:26 AM	11:00 PM	12.2%	Ed Rumsey
8/19/2023	Member	7:29 PM	8:57 PM	(9:23 PM)	10:30 PM	10.9%	Bob Roth
9/9/2023	Public	7:02 PM	8:26 PM	2:17 AM	10:00 PM	24.5%	Joe Fox & Ed Rumsey
9/16/2023	Member	6:53 PM	8:16 PM	(7:52 PM)	10:00 PM	3.0%	
10/7/2023	Public	6:25 PM	7:47 PM	1:07 AM	9:30 PM	40.2%	Paul Krizak
10/14/2023	Member	6:16 PM	7:38 PM	(6:22 PM)	9:30 PM	0.0%	Igor von Nyssen
11/4/2023	Public	5:55 PM	7:18 PM	11:54 PM	9:00 PM	57.8%	Bob Roth
11/11/2023	Member	4:49 PM	6:14 PM	5:34 AM	8:00 PM	2.8%	
12/9/2023	Member	4:42 PM	6:10 PM	4:22 AM	8:00 PM	12.0%	Bob Roth
12/16/2023	Public	4:44 PM	6:12 PM	(8:54 PM)	8:00 PM	20.1%	

[†] Illumination at meridian crossing.

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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