

San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach



January 2022

SDAA Update

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

Next SDAA Business Meeting

January 11th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting

January 19th at 7:00pm
Live Stream

SDAA is now actively using online facilities like Zoom and YouTube to provide access to club meetings and special events. While our public outreach events have restarted in some San Diego County facilities, most events in city owned facilities are still undergoing review.

Public outreach events have restarted at The Lipp telescope. The Lipp hosts will limit the amount of people inside the observatory when the telescope is operational. Please observe masking and social distancing guidelines if you are unvaccinated.

As the pandemic remains a part of our lives, please continue to observe safe practice guidelines while at TDS.

Program Meeting January 19th

Speaker: Zoltan Levay

Topic: Creating the Pillars: Visualizing Hubble's Colorful Universe

Zoltan G. (Zolt) Levay was Imaging Group Lead in the Office of Public Outreach at Space Telescope Science Institute in Baltimore, MD. Since 1993 he was primarily responsible for producing publicly accessible images from Hubble Space Telescope data to illustrate Hubble's science discoveries. He is a member of the Hubble Heritage Team, a grant-funded program within STScI striving to establish a repository of the visually finest Hubble imagery.



Zolt Levay originally joined STScI as a contractor for Computer Sciences Corporation in 1983, developing software to translate Hubble data into images for analysis. In 1993, he joined the staff of the news office within what would become STScI's Office of Public Outreach, working with astronomers to prepare their Hubble data for press release images. He retired in 2018.

Levay received his BS in astrophysics in 1975 from Indiana University, and the MS in astronomy in 1978 from Case Western Reserve University.

You can register in advance for the meeting at the following link. After registering, you will receive a confirmation email containing information about joining the meeting.

<https://us02web.zoom.us/j/89298162225?pwd=TVZsTTg3dzRXcERDY0tXcHErVXArQT09>

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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.

[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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2021 Banquet Speaker is Scott Kardel

Revolution in Amateur Astronomy: Electronically Assisted Astronomy

A new wave of consumer telescopes with integrated imaging systems are poised to revolutionize the hobby of astronomy. Astronomer Scott Kardel from Palomar College discusses his experience using one of these new telescopes and explains how they are changing public outreach, creating an easy entry into astrophotography to more people than ever before and are being used as powerful tools for citizen science.



Professor Kardel is an associate professor of astronomy in the Earth, Space & Environmental Sciences department at Palomar College and is assistant director of the Palomar College Planetarium. He has a B.S. in physical science / secondary education from Northern Arizona University and an M.S. in astronomy from the University of Arizona. SDAA members know him as former outreach coordinator at Palomar Observatory and as an executive with the International Dark Sky Association. He has also worked at Lake Afton Public Observatory and as a high school science teacher.



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San Diego Astronomy Association Board of Directors Meeting December 14, 2021- Unapproved and subject to revision

1. Call to Order

The meeting was held via Zoom and was called to order at 7:13pm with the following board members in attendance: Dave Wood, President; Kin Searcy, Vice President; Melany Biendara, Treasurer; Gene Burch, Recording Secretary; Hiro Hakozaki, Director; Dave Decker, Director; Mike Chasin, Director; Pat Boyce, Director.

2. Approval of Last Meeting Minutes

The November meeting minutes were approved.

3. Treasurers & Membership Report

The treasurer's report was approved. We were the victim of a \$5,000 fraud when someone wrote a counterfeit check on our account. Mel is working with a business banker to recover our money. Mel has worked hard to close the compromised accounts, cancel our credit/debit cards and she now gets an alert whenever there is activity in one of the new accounts. She and the banker have insured that all available safety measures are in place to protect our accounts. Three grandfathered pads were bought back and are now for lease. She has completed the necessary paperwork for our non-profit status and raffles.

4. Standard Reports

a. Site Maintenance Report:

The basins on either side of the culvert at the entrance to TDS have, as expected, collected some sediment and debris. They will need periodic cleaning to ensure the culvert continues to function as designed and to ensure sediment and debris does not back up into the culvert which can lead to more serious issues such as puddling or clogging. I blew some of the loose sediment and debris out of the basin with a blower I had in my car. I will bring a shovel out to clean out the basins some more the next time I head out to TDS.

People continue to leave their towels and self-care products in the shower area. This is a recurring issue. I provided a PSA about this in an article for the January newsletter. I will make some laminated signs reminding members to take their personal belonging with them or they may be thrown out. I intend on cleaning out the shower stall area and posting the laminated signs when I head out to TDS next.



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b. Observatory/Loaner Scope Report:

Observatory:

Observatory has been running well. We have excellent host participation and attendance. Filling the 2022 host schedule now.

Ed requested permission to host the Rancho Bernardo High School – Astronomy Club at TDS on an unspecified evening – other than a “Member Only Night.” Kin and I hosted them once before and they were an excellent group. I will ensure the same conditions the board approved last time are satisfied. Request was approved by the board.

Loaner Scopes:

After many years of excellent service as the Loaner Scope chairperson, Ed Rumsey is stepping down. Thanks, Ed, for all your hard work! Per the transition plan, this is the last month for issuing scopes until a replacement is found. Ed will modify the website and newsletter accordingly in January.

We sold another two scopes at the start of December. These sales give us another \$1,400 for the treasury. That brings our total to just over \$10,000 since we started three years ago. More importantly, it has put 36 instruments into the hands of fellow associates. Dave Decker and David Wood have contributed significantly.

c. Private Pad Report:

Pad Lease and Waiting List numbers are unchanged, not uncommon for this time of year. We have one Lessee who has been looking for an upgrade for a long time swapping pads, but that will not change the overall numbers.

Pad 26 submitted a proposal for a structure that I’m waiting for a BOD Decision on. Pad 62 is getting close to submitting his Phase 1 proposal for his pad (will eventually be a fully automated set-up).

We currently have a lot of benches, cabinets, and now structures on the private pads and there should probably at least be a discussion about how we would handle severe neglect other than just terminating leases. The board agreed and will discuss this further and also consider what to do with structures that are left when a pad is returned to the club.

d. Program Meetings Report:

Our 2022 Banquet Speaker will be Astronomer Scott Kardel from Palomar College and his topic will be:

Revolution in Amateur Astronomy, Electronically Assisted Astronomy:

A new wave of consumer telescopes with integrated imaging systems are poised to revolutionize A new wave of consumer telescopes with integrated imaging systems are poised to revolutionize the hobby of astronomy.



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He will discuss his experience using one of these new telescopes and explains how they are changing public outreach, creating an easy entry into astrophotography to more people than ever before and are being used as powerful tools for citizen science.

e. AISIG Report:

In November, the AISIG ZOOM explored the NINA open-source software. NINA is a new way to control your telescope, camera, and other equipment. Being open source it's free, supported by many developers and quite capable. We viewed several YouTube videos and discussed NINA in detail. There will not be an AISIG ZOOM in December.

After three years of service as the AISIG chairperson, Scott Dixon is stepping down and we are looking for a replacement. Thanks to Scott for all his hard work!

f. Newsletter Report:

Looks great as always – Thanks Andrea!

g. Website Report:

Nothing to report.

h. Social Media:

No Report.

i. Outreach Report:

Dennis Ammann has received notice from The Fleet CEO, Steve Snyder, that we are approved to restart Stars in the Park in conjunction with their Planetarium Show. Unfortunately, The Fleet had some issues with their new projection system and their first showing has been delayed until January 2022.

Our last Dixon Lake event this year was cancelled due to weather.

Below is a summary of outreach event participation with numbers for November and for Year to Date.

2021	November	YTD
Events Completed	9	29
Events Cancelled	2	51
Total Attendance	552	1647



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In addition to the “in person” events listed above, Gary Hawkins and I have completed another Lunar Eclipse live stream for Timeanddate.com. The full, 4-hour video is available on the Timeanddate YouTube site. Gary’s time lapse, 10-minute version is available on the SDAA YouTube site. These both include a nice interview of Gary and I by Graham Jones and Anne Buckle from Timeanddate. Their live stream program had about 10K live viewers and over 500K views of the posted video so far.

j. TARO Report:

Over a period of time, the online status communication and email notifications from the UPS and Power Distribution Unit have not been sent when the observatory loses power. When I notified the vendor of the issue, two new updated communication cards have been provided by the manufacture free of charge. Those new cards will be installed before the end of the year. In the meantime, TARO is operational and is accepting DSO/EXO target imaging requests, weather permitting.

k. Cruzen Report:

Nothing new to report.

l. Merchandise Report:

No sales this month.

m. Astronomical League Report:

Nothing new to report.

n. JSF Report:

Nothing new to report

o. Primary Grid Reconstruction Report

No report.

5. Old Business:

- a. The SDAA Banquet is scheduled for February 12, 2022. We received nearly 200 responses to our survey and only 30% of the respondents were willing to attend a “live” or in person event. Because of this, we have decided to hold the banquet via Zoom.
- b. Dave showed us some pictures of a patio cover made from “Alumawood” and he will talk with our site maintenance chairperson, Ben G to research replacing our existing patio cover.
- c. Neither Gene or Mike were at TDS this past month, but they will try to meet with the neighbors regarding the lighting issues with their property.
- d. Other Old Business – none

6. New Business:

- a. New business - none

7. Adjournment: The meeting was adjourned at 8:35pm.

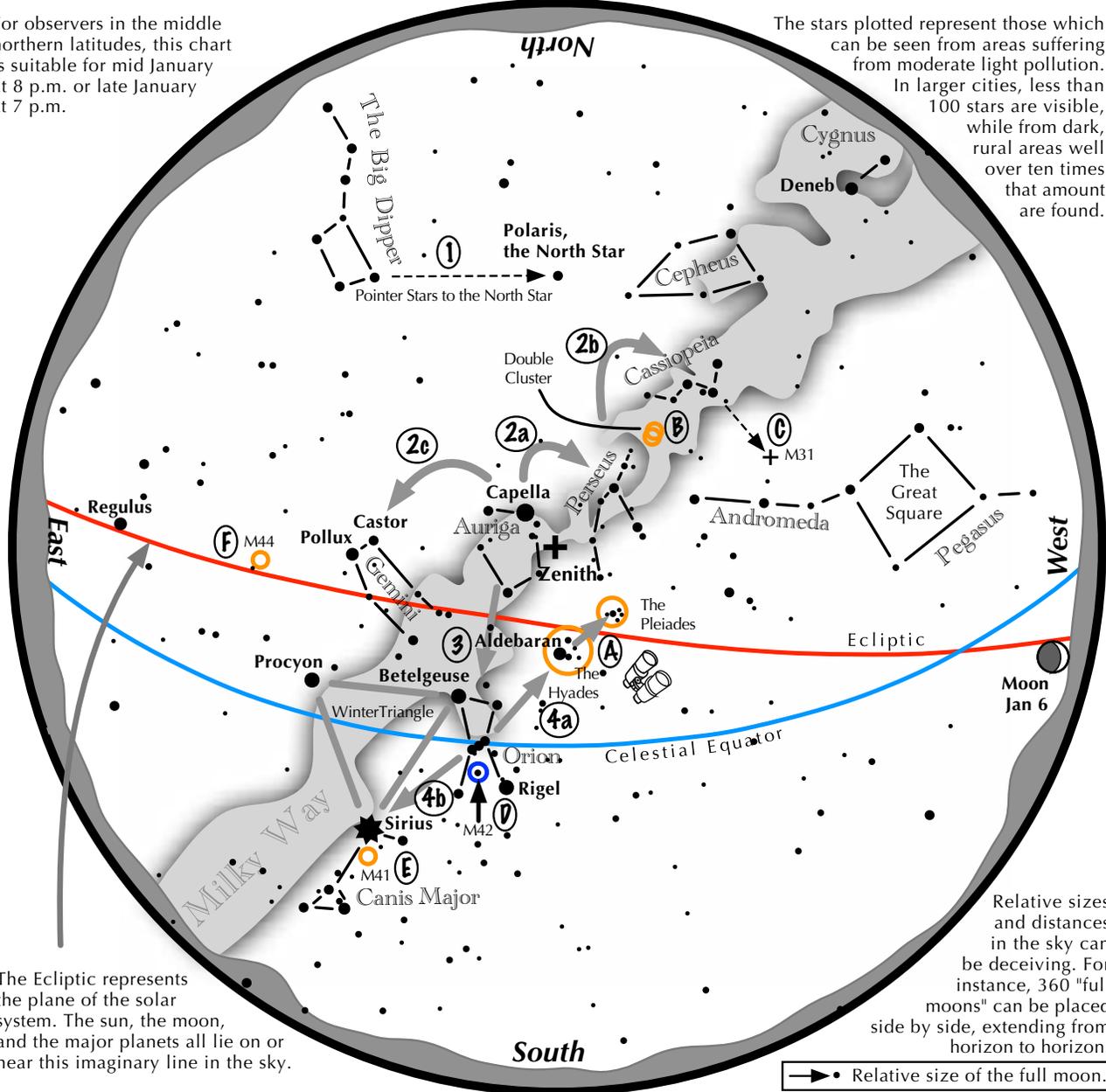


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Navigating the mid January Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid January at 8 p.m. or late January 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 winter 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 Castor and Pollux of 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 to the red star Aldebaran, then to the Hyades, and the Pleiades star clusters. Travel to the southeast from the Belt stars to the brightest star in the night sky, Sirius.

Binocular Highlights

- A: Examine the stars of the Pleiades and Hyades, two naked eye star clusters.
- 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 to the southeast of Pollux.



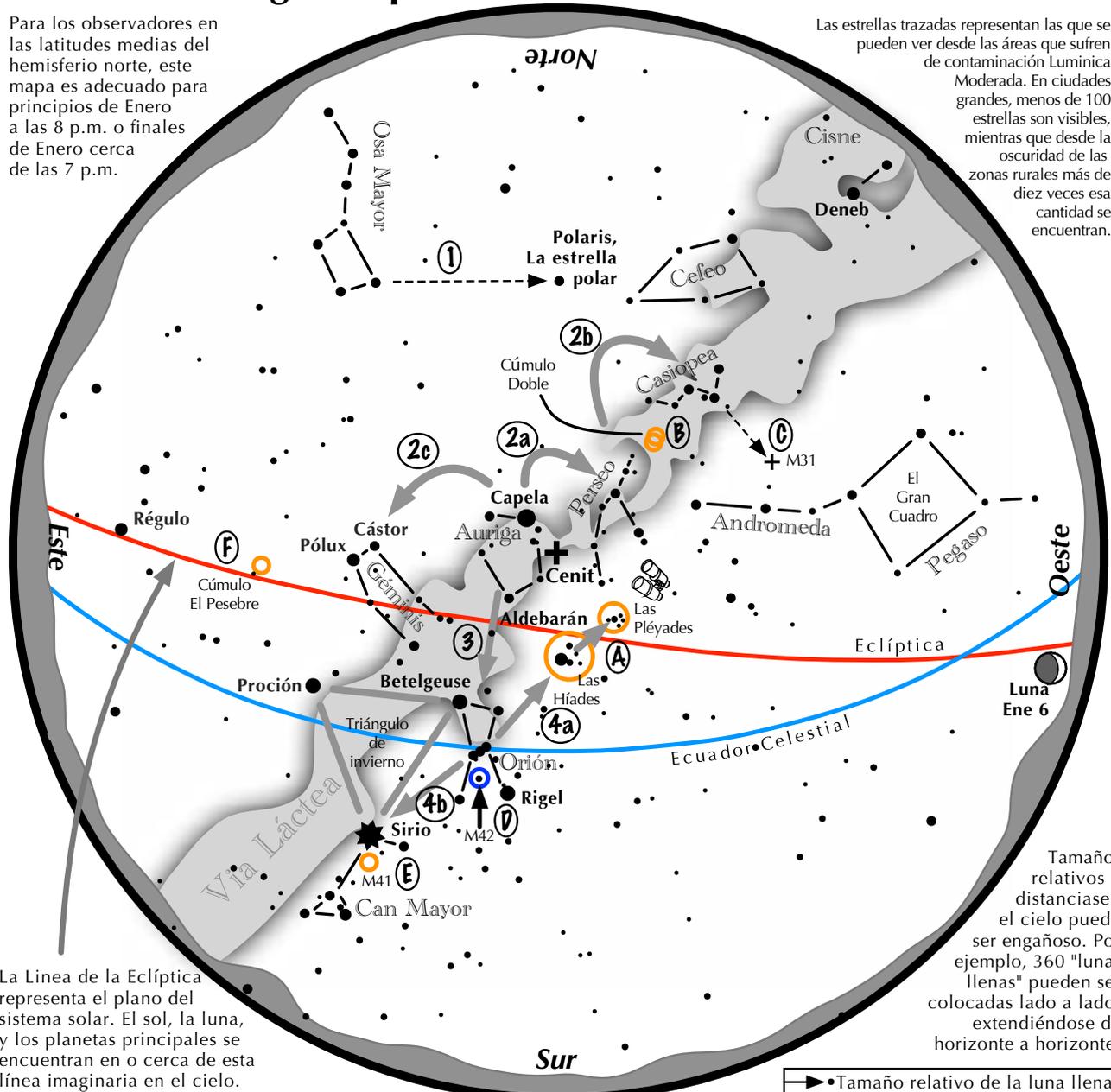


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Navegando por el cielo nocturno de Enero

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

Tamaños relativos y distancias en el cielo pueden 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. Siguiendo salte 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 estrellas 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 Híades, y luego hacia el cúmulo estelar de las Pléyades. Viaja hacia el sudeste desde las estrellas del cinturón hasta la estrella más brillante en el cielo nocturno, Sirio.

Puntos destacados con binoculares

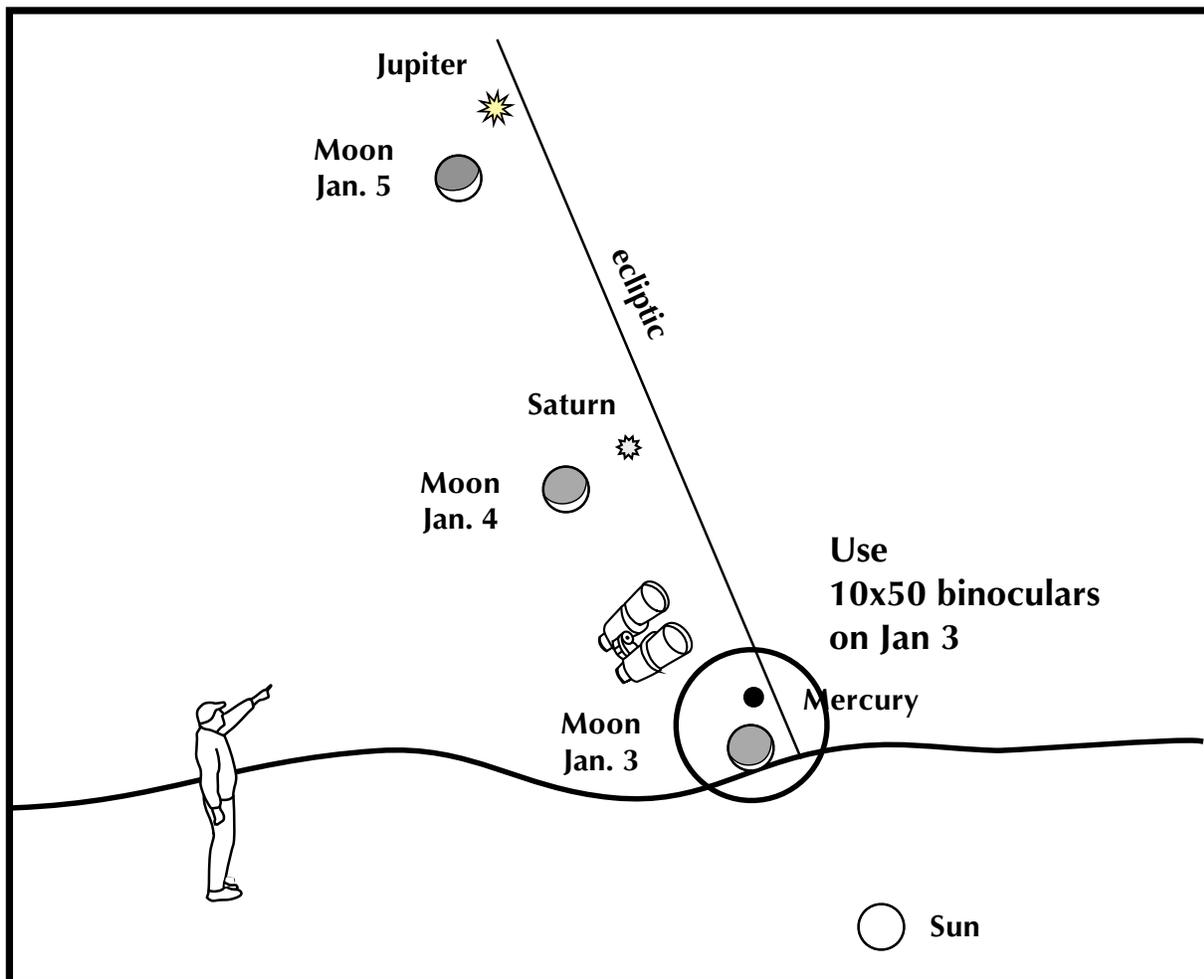
A: Examina las estrellas de las Pléyades y las Híades. **B:** Entre la "W" de Casiopea y Perseo se encuentra el Doble Cúmulo. **C:** Las tres estrellas más occidentales de la "W" de Casiopea apuntan hacia el sur hasta M31, la Galaxia de Andrómeda, un óvalo "borroso." **D:** M42 en Orión es una nebulosa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





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If you can see only one celestial event in the evening this January, see this one.



- Look in the southwest beginning 30 minutes after sunset on January 3.
- Mercury feebly shines low above the horizon with the very thin crescent moon glowing immediately below it.
- The moon is 1.2 days past new.
- Above Mercury is Saturn and above Saturn is bright Jupiter.
- The moon lies next to Saturn in the evening of January 4 and below bright Jupiter on January 5.



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Innovations Academy Conducts Astronomy Lab at Vallecito County Park

By Dennis Ammann, SDAA Central County Outreach Coordinator

Last September I received an email from Ms. Nora Bowman, 8th Grade Teacher, Innovations Academy requesting SDAA's help in providing an astronomy lab for her campout at Vallecito Stage Station County Park on Thursday, November 4th. Since this was on a weekday, I took the lead as most people are working and/or is too far to drive, 120 miles one way.

The Monday prior to the campout, I left twenty red glow sticks at the front desk for Nora to talk about night vision and how red lights adapt our eyes to the dark. Just one 'flash' of white light will destroy her students' night vision and we'll have to wait 15 minutes for our eyes to readapt to the dark. I also asked Nora to give the students three easy items to remember: 1. Speed of Light; 2. One Astronomical Unit; and 3. Distance light travels in one year. Armed with these three facts or measuring sticks, this data will help anyone understand how faraway celestial objects are when pointing them out.

On Thursday, November 4th, I checked in with Nora at 12 noon at the BBQ area. This park is about 40 miles south of Anza-Borrego Desert State Park Visitor's Center. There were nineteen students and two parent-fathers to help her, for a total of twenty-two people attending this stargazing event. After check-in, Nora and her students left for Agua Caliente for a swim in the pool. Although autumn, it was well over 90 degrees F. I set up my tent in the campsite amphitheater. The weather was perfect, clear, dry, and blue skies. At 4:00pm the class returned to the campsite and prepared for dinner. Mr. Long Liam was the Chief Chef, cooking hamburgers and all the fixin's for everyone and Nora brought a delicious tater tot casserole. Joe Bielawski was the other parent who was constantly chipping in wherever he could help. These two parents were the backbone of this event, providing guidance and watching out for the safety of the students.

At sunset, my 10" Dobsonian reflector telescope was ready to go, but my 70mm refractor's tripod was wobbly, so I couldn't use it all night. In the beginning, I had two students with me and taught them how to aim and focus my telescope while the others were eating dinner. Jupiter was missing one of its four Galilean Moons, Europa, which was behind the planet, so only three Jovian moons were visible. We could see the cloud bands very well before nightfall, but when it became dark, Jupiter was just too bright to see them very well.

When dinner was over, I started with Venus, Jupiter, Saturn telling the teens the distances in light minutes to these three planets, that they were seeing them in the past. Saturn was the show stopper of the night with its rings blazing away and about seven moons spread out around it.

We had to move *fast* for the first object, the Mizar/Alcor star system in the Big Dipper's handle as it was setting behind the western mountain ridgeline. I grouped the students in threes and positioned their fists (representing a particular star) according to where they would see them in my telescope. I told them about the Mizar/Alcor six-star system in the Big Dipper's handle. Each person in the group represented Mizar A and B, Ludwig's Star, and Alcor. After I described how far away, they were (82 light years), and their positions, I told them each star had a red dwarf orbiting each star, becoming a six-star system. Ludwig's star also in this group is not a member of this system as its 300 light years in the background.

We took a quick look at the red giant star, Antares before it set, telling them how large it is as it would extend slightly beyond the orbit of Mars, if replaced by our sun. This star is 550 light years from Earth.

I wanted to show them the constellation of Sagittarius, but it was already in the San Diego/Tijuana light pollution dome, low in the SW. This summer constellation is an excellent way to show them where the center of the Milky Way Galaxy is, but that was not to be in autumn. I then pointed my green laser pointer in the general direction of the center, then extended my green laser beam above and behind us towards the east. They immediately saw a thin cloud... the *Milky Way*. Later I handed out Milky Way candy bars so they could contrast a candy bar and the real Milky Way. I suspect some of the students have never seen the Milky Way.

Next was a constellation walk across the dark starry sky, pointing out Pegasus, Andromeda, Northern Cross, Little Dipper, Perseus, Cassiopeia, and Triangulum. Later that night I pointed out Taurus and its red giant star Aldebaran.



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The next *'hands-on'* lesson was the star Capella low in the east. I wanted to show them what a bright star looks like through the thickest part of the atmosphere. Capella didn't disappoint us as each student looked through the telescope at this star as it streamed every color of the rainbow like a diamond. After this lesson in light diffraction, I had them pair off in twos with one student pointing to Capella and the other student aiming the student's opposite arm in the opposite direction. This taught them when pointing at Capella the other arm is pointing the opposite way, towards the Milky Way's center.

As the constellations Andromeda and Pegasus rose in the east, it was time to find Andromeda Galaxy, our next-door neighbor 2.5 million light years away. This is when they learned how to find it by 'star hopping' and using their averted vision. They all went home with bragging rights having seen the farthest object the unaided human eye can see. We first located the giant square of Pegasus, then I pointed out the star Alpheratz, star hopped to Mirach, just above the faint star above Mirach is a faint *blur*... Andromeda Galaxy. To understand what they were looking at, I showed them a picture of this galaxy on my iPad taken by a land-based telescope.

As the night slipped away, it was time for the Greek Mythology story, 'Andromeda.' One of the students picked the characters for this play, i.e., Pegasus the flying horse, Perseus the hero, Andromeda the daughter of Cassiopeia, Cassiopeia the Queen, Cepheus the King, Cetus the sea monster, Poseidon ruler of the seas, and his mermaids. I narrated the story as each student performed their role. This was very funny because I switched the genders, i.e., the hero Perseus was performed by a female as she walked around macho, Queen Cassiopeia was a male student with a wig, acting like her royal majesty. The play took about 20 minutes to complete as I pointed out each character in the play above them as a constellation. They had fun earning a Hollywood Oscar Trophy for their respective performances during this story. They also learned where each constellation was in the autumn sky.

At 9:30pm, the students' attention span was starting to expire, so we ended our astronomy lab and gave the students a break. They all headed for the firepit to make chocolate s'mores. Some returned to the amphitheater for more informal observations with me. I told Nora, that I'd be up at 5:00am if anyone wanted to see Orion the Hunter and all the winter constellations, plus Mercury and Mars rising just before the sunrise.

The students turned in by 11:00pm, I stayed up until mid-night, taking advantage of this dark sky before turning in. At 4:45am my alarm went off, got up, and readied my telescope for the early bird students. Sure enough, Nora and eight of her students arrived, ready for more stargazing. I showed them Orion, Sirius Major, Taurus the Bull, Big Dipper, and Gemini. This included the Winter Triangle asterism which makes up, Betelgeuse, Procyon, and Sirius. They all took turns viewing Orion Nebula, nursery of newborn stars. While scanning the eastern horizon, we never did find Mercury or Mars.

Soon the sun chased away all the planets and stars away, and another day awaited us. Breakfast was prepared by Master Chef Liam at 8:00am. After breakfast, the students broke camp and stowed their camping gear by the BBQ for pack-out when their parents arrived later. Nora scheduled them for a nature hike at 9:30am, but before they left, they all lined up single file in front of me, shook my hand, and thanked me! I was close to tears; never have I been thanked like that before. One week later, Nora gave me a thank you poster board with inscriptions from the students thanking me for what they saw and learned.

This was the third time I've taught astronomy at Innovations Academy, with the first two daytime classroom sessions about three years ago. This third session was an astronomy lab out in the field, all night! I don't know of any public school or teacher like Nora Bowman who would take on such an educational endeavor in the desert. How fortunate these 8th graders are to attend such a wonderful school and be blessed with a teacher like Nora.

Astronomy is more than just taking pictures of the heavens and looking through a telescope at a distant celestial object, it's a way to link human beings together, through the stars, something the world needs more than ever.

Clear skies!



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Vallecito BBQ area



Some of audience watching lame Greek show



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Poseidon (Rt)
& his beautiful
mermaids (Lt)



The beautiful
Andromeda (Lt)
King Cepheus
(Rt)



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Nora was Cetus Sea Monster (Lt), below her Sea Rock & Andromeda



Perseus (Rt), Andromeda (ctr) ready to ride Pegasus Flying Horse (foreground) with Sea Rock & King Cepheus (Lt) saying good-bye



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King Cepheus sitting on his throne



Andromeda (far Lt), King Cepheus (Lt), Narrator (ctr), 3 beautiful mermaids (Rt)



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My award, a thank you poster from the students



San Diego Astronomy Association

Letter of Appreciation

To: SDAA

Hello, my name is David Alvarez and I have been a member for 11 months.

About 30 years ago my wife and I were at Balboa Park, we went to see a play. As we walked out of the theater, we found a person with a telescope. I asked him what he was looking at. He mentioned Saturn, and my wife and I looked through the scope and was astonished to see Saturn for the first time. I will never forget the feeling of that first time.

A few months ago, I got a gift of a 4" reflecting telescope and I looked at Jupiter, Saturn and the Moon extensively. I tried to learn the name of the craters and all the different details of the moon. It was fun to notice how the moons in Jupiter were never at the same spot. And Saturn well, it brought back memories.

I requested from the club a telescope and was so lucky to get a 10" reflecting scope. I live in Tijuana, so I found a dark place about 20 minutes outside of Tecate. (Tecate is about 30 minutes east of Tijuana).

With the 10" scope I found my first galaxy M31. The feeling of finding my first galaxy was just exhilarating. As you members know I had the scope for three months and had so much fun looking at the sky all that time.

On the last day of me enjoying the scope, I invited my neighbors to join me for one last time in the dark sky area.

There were five (5) adults and three (3) young teenagers that joined me for that one last time and lucky for us there was no moon in the sky. I put Saturn first and the expression on the young teenagers as they saw a planet for the first time was just the most rewarding feeling, even the adults' expressions reminded me of my first time. We looked at Jupiter, Orion Nebula, Pleiades, M31. Plus, I explained the constellations that were visible that night.

This would not have been possible if I had not borrowed the scope from the club.

Becoming a member of this honorable astronomy club has been the best experience of my life.

David Alvarez



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For Sale: A gray tube Starbright XLT coated Celestron 11 OTA with Losmandy D series dovetail, Starizona Hyperstar compatible secondary holder and virtual view 2" back, Starlight Instruments Feathertouch Micro, Celestron 8x50 finder scope, and an Astrozap aluminum dew shield. Plus the original trunk and foam.

All is in good condition except there are some small shiny dew or sap spots on the corrector from the previous owner living around pine trees. Normal cleaning solutions didn't remove them but they are transparent viewing through the scope. The Celestron footlocker is a bit rusty around the metal trim but still very serviceable.

The scope had belonged to Brian Jennings before I bought it from his widow earlier this year but I recently inherited an older orange tube model complete with fork mount from a friend so this newer gray one needs a new home. Asking what I have into it which is \$1200 cash for local purchase only in the San Diego area. E-mail me at dmcf00dcafe@cox.net. Thanks! Dave McGough





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SDAA Contacts

Club Officers and Directors

President	Dave Wood	President@sdaa.org	(858) 735-8808
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AISIG	Scott Dixon	AISIG@sdaa.org	(858) 673-9588
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Field Trips	-Vacant-	FieldTrips@sdaa.org	
Grants/Fund Raising	-Vacant-	Grants@sdaa.org	
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Governing Documents	TBD		
TDS Network	Dave Wood	TDSNet@sdaa.org	(858) 735-8808
Amateur Telescope Making	-Vacant-		
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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

2022 Texas Star Party – Reminder to Submit Your Application To Attend TSP 2022

Happy New Year from our homes to you!

The great tradition of dark-sky observing continues with the 42nd Annual TEXAS STAR PARTY, April 24 to May 1, 2022, at historic Prude Ranch near Ft Davis, Texas.

If you have not yet applied to attend, this is your invitation and reminder. New this year: ALL TSP attendees, including those staying in offsite accommodations, must be pre-registered in order to attend. No walk-in attendance or registration at the door is possible this year.

To get started, login to your account. If you do not have a login, create your login account [here](https://texasstarparty.org/). <https://texasstarparty.org/> Once you are logged into your account, update your TSP user account, and review the policies (including Covid precautions) that are in place. Go to this webpage: Applications 1st Page FYI/Instructions to preview the Application Instructions (page 1 of the Application). Once you have familiarized yourself (and any family members who will attend with you) you can launch the application by accessing this link on our website: Application to Attend TSP 2022. Make all your selections for each page and review them before advancing to the next page. The Application form is for Individual and Family attendees. Vendors, please use the Individual selection for all that are attending with you by submitting a separate application for each of your representatives. All persons applying, the application must include your choice of 3 housing preferences and you must indicate by your choice of housing whether you are staying onsite or offsite. (including on ranch or offsite). TSP conducts a Random Drawing to assign housing accommodations. The have the best chance to be selected and your primary choice of housing assigned, it is recommended that you select 5 or more days of attending TSP 2022. Preference is given to those persons applying to stay 5 or more days.

Staying on the Ranch in housing, RV, or camping? Our housing drawing will be held in January. You should submit your application before January 5th to ENTER THE TSP DRAWING. This will provide you the highest possible chance of obtaining on-ranch housing (supply is limited). If you are staying offsite, you need to apply in advance, so sign up now at the link above.

All registration and registration fee payments must be processed on or before April 15, 2022. Please do not expect to register at the ranch. We no longer provide that option. Thank you.

We are excited to bring back the in-person Texas Star Party for 2022, and hope to see you there!

See all of you very soon at TSP 2022. We will leave Rudolph's red nose on for y'all to guide the way.

Best Regards
Management and Staff of Texas Star Party, Inc



San Diego Astronomy Association

NASA Night Sky Notes

January 2022



This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach.

Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Hunting the Hunter: Observing Orion

David Prosper

If you are outside on a clear January night, it's hard not to notice one distinctive star pattern above all: **Orion!** While we've covered Orion in earlier articles, we've never discussed observing the constellation as a whole. Perhaps you've received a new telescope, camera, or binoculars, and are eager to test it out. Orion, being large, prominent, and full of interesting, bright objects, is a perfect constellation to test out your new equipment and practice your observing skills - for beginners and seasoned stargazers alike.

In Greek mythology, Orion is a strong hunter, with numerous legends about his adventures. Being such a striking group of stars, cultures from all around the world have many myths about this star pattern. There are so many that we can't list them all here, but you can find a wonderful interactive chart detailing many cultures' legends on the Figures in the Sky website at figuresinthesky.visualcinnamon.com.

What sights can you see in Orion? Look above the variable orange-red supergiant "shoulder star" Betelgeuse to find the stars making up Orion's "club," then move across from Betelgeuse towards the bright star Bellatrix (Orion's other "shoulder") and the stars of his bow and arrow - both essential tools for the Hunter. Many interesting sights lie near Orion's "belt" and "sword." Orion's belt is made up of three bright giant stars forming an evenly spaced line: Alnitak, Alnilam, and Mintaka. Move from the belt stars towards the stars Rigel and Saiph (Orion's "feet" or "knees") to arrive at Orion's distinctive Sword, parts of which may appear fuzzy to your unaided eyes. Binoculars reveal that fuzz to be the famed Orion Nebula (M42), perched right next to the star Hatysa! Diving in deeper with a telescope will show star clusters and more cloud detail around the Nebula, and additional magnification brings out further detail inside the nebula itself, including the "baby stars" of the Trapezium and the next-door neighbor nebula M43. Want to dive deeper? Dark skies and a telescope will help to bring out the reflection nebula M78, the Flame Nebula (NGC 2024), along with many star clusters and traces of dark nebula throughout the constellation. Very careful observers under dark clear skies may be able to spot the dark nebula known as the Horsehead, tracing an equine outline below both the Belt and the Flame Nebula. Warning: the Horsehead can be a difficult challenge for many stargazers, but very rewarding.

This is just a taste of the riches found within Orion's star fields and dust clouds; you can study Orion for a lifetime and never feel done with your observations. To be fair, that applies for the sky as a whole, but Orion has a special place for many. New telescopes often focus on one of Orion's treasures for their first test images. You can discover more of NASA's research into Orion's stars - as well as the rest of the cosmos - online at nasa.gov.



San Diego Astronomy Association

NASA Night Sky Notes

January 2022



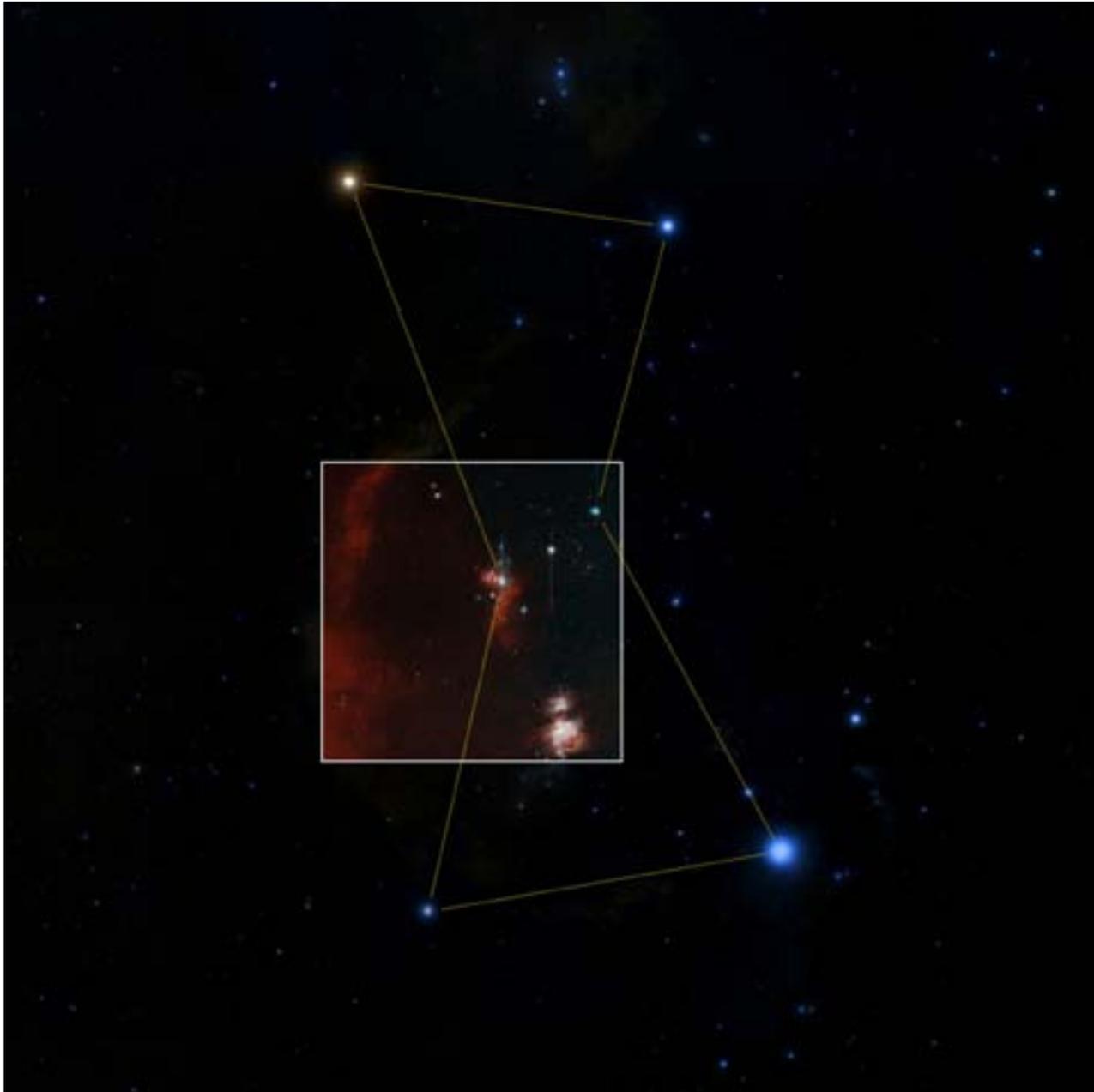
Northern Hemisphere observers can find Orion during January evenings in the east/southeast skies. Can you spot the Orion nebula with your naked eye, in Orion's sword? How does it look via binoculars or a telescope? What other details can you discern? Please note that some deep sky objects aren't listed here for clarity's sake. For example, M43, a nebula located directly above M42 and separated by a dark dust lane, is not shown. Orion's Belt and Sword are crowded, since they star-forming regions! You can read more in our November 2019 article *Orion: Window Into a Stellar Nursery*, at bit.ly/orionlight.
Image created with assistance from Stellarium.



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January 2022



The inset image is the “first light” photo from the Zwicky Transient Facility, a large survey telescope designed to detect changes in the entire night sky by detecting “transient objects” like comets, supernovae, gamma ray bursts, and asteroids. For many astronomers, amateur and pro alike, Orion is often the “first light” constellation of choice for new equipment!

Image Credit: Caltech Optical Observatories



San Diego Astronomy Association

2022 TDS Star Party Schedule

Date	Type	Sunset	Astro. Twi.	Moonrise(set)	Illumination [†]	Notes
Jan-1	Member	4:53 PM	6:21 PM	6:59 AM	2%	Quadrantids peak night of Jan 2/3 (ZHR ^{††} 120)
Jan-29	Public	5:18 PM	6:43 PM	5:42 AM	9%	
Feb-5	Public	5:25 PM	6:49 PM	(10:20 PM)	26%	
Feb-26	Member	5:43 PM	7:05 PM	4:27 AM	21%	Mercury Greatest Western Elongation - Feb 16 (AM)
Mar-5	Public	5:49 PM	7:10 PM	(9:04 PM)	12%	
Mar-26	Member	7:04 PM	8:27 PM	4:13 AM	34%	
Apr-2	Public	7:09 PM	8:33 PM	(8:49 PM)	3%	
Apr-30	Member	7:29 PM	9:00 PM	6:32 AM	0%	Mercury Greatest Eastern Elongation - Apr 29 (PM)
May-21	Public	7:44 PM	9:21 PM	1:37 AM	64%	
May-28	Member	7:49 PM	9:28 PM	5:06 AM	3%	Memorial Day Weekend
Jun-18	Public	7:59 PM	9:40 PM	12:11 AM	78%	Mercury Greatest Western Elongation - Jun 16 (AM)
Jun-25	Member	8:00 PM	9:42 PM	3:43 AM	10%	
Jul-23	Public	7:53 PM	9:29 PM	2:22 AM	22%	
Jul-30	Member	7:48 PM	9:22 PM	(9:25 PM)	5%	S. delta Aquariids peak night of Jul 29-30 (ZHR ^{††} 16)
Aug-20	Public	7:27 PM	8:55 PM	1:01 AM	37%	Saturn at Opposition on Aug 14
Aug-27	Member	7:19 PM	8:45 PM	7:30 AM	0%	Mercury Greatest Eastern Elongation - Aug 27 (PM)
Sep-17	Public	6:51 PM	8:14 PM	11:40 PM	54%	Neptune at Opposition on Sep 16
Sep-24	Member	6:42 PM	8:04 PM	6:20 AM	2%	Jupiter at Opposition on Sep 26
Oct-15	Public	6:15 PM	7:37 PM	10:21 PM	71%	Mercury at Greatest Western Elongation - Oct 8 (AM)
Oct-22	Member	6:07 PM	7:29 PM	5:06 AM	8%	Orionids peak night of Oct 20-21 (ZHR ^{††} 20)
Nov-19	Public	4:45 PM	6:11 PM	2:50 AM	21%	Leonids peak night of Nov 17-18 (ZHR ^{††} 15)
Nov-26	Member	4:43 PM	6:09 PM	(7:31 PM)	12%	Thanksgiving Weekend
Dec-17	Public	4:44 PM	6:13 PM	1:34 AM	38%	Geminids peak night of Dec 13-14 (ZHR ^{††} 150)
Dec-24	Member	4:48 PM	6:16 PM	(6:21 PM)	3%	Ursids peak night of Dec 21-22 (ZHR ^{††} 10)

[†] Illumination at meridian crossing.

^{††} Published *zenithal hourly rate(s)* ZHR vary widely between sources.

AmazonSmile Donations

The SDAA board wants to thank members for using the AmazonSmile donation link as you've helped us raise over \$300 in 2020 at no cost to you. This is three times the amount we received in 2019. Our URL is smile.amazon.com/ch/51-0183640 and, if you are an Amazon user, we hope you will encourage your family to use this option.

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; \$35 for Basic Membership; \$60.00 for Private Pads; \$5 for each Family membership.