San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach

November 2026

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

Next SDAA Business Meeting
November 10th at 7:00pm

Via Zoom

Next Program Meeting
November18th 2026

Via Zoom

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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.

November Program Meeting

Date / Time: November 18th @7PM
Location: Zoom
More info will follow

Nightfall 2026 will be held November 6th thru 8th!

November 6 – 8, 2026
Palm Canyon Hotel & RV Resort
221 Palm Canyon Dr.
Borrego Springs, CA 92004
https://nightfallstarparty.com/

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

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

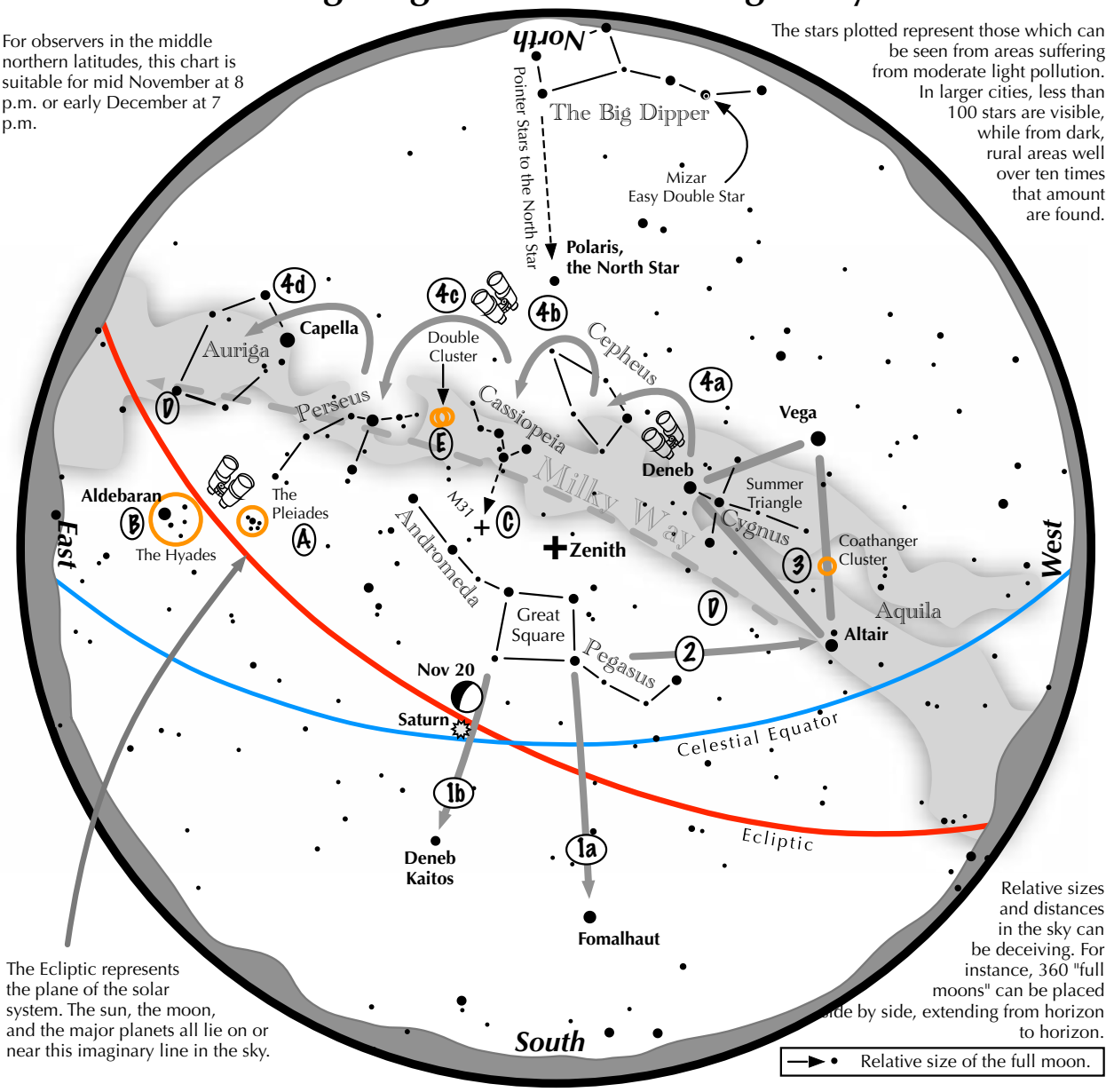
San Diego Astronomy Association

Navigating the November Night Sky

2026

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.

Relative size of the full moon.

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 brighest 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

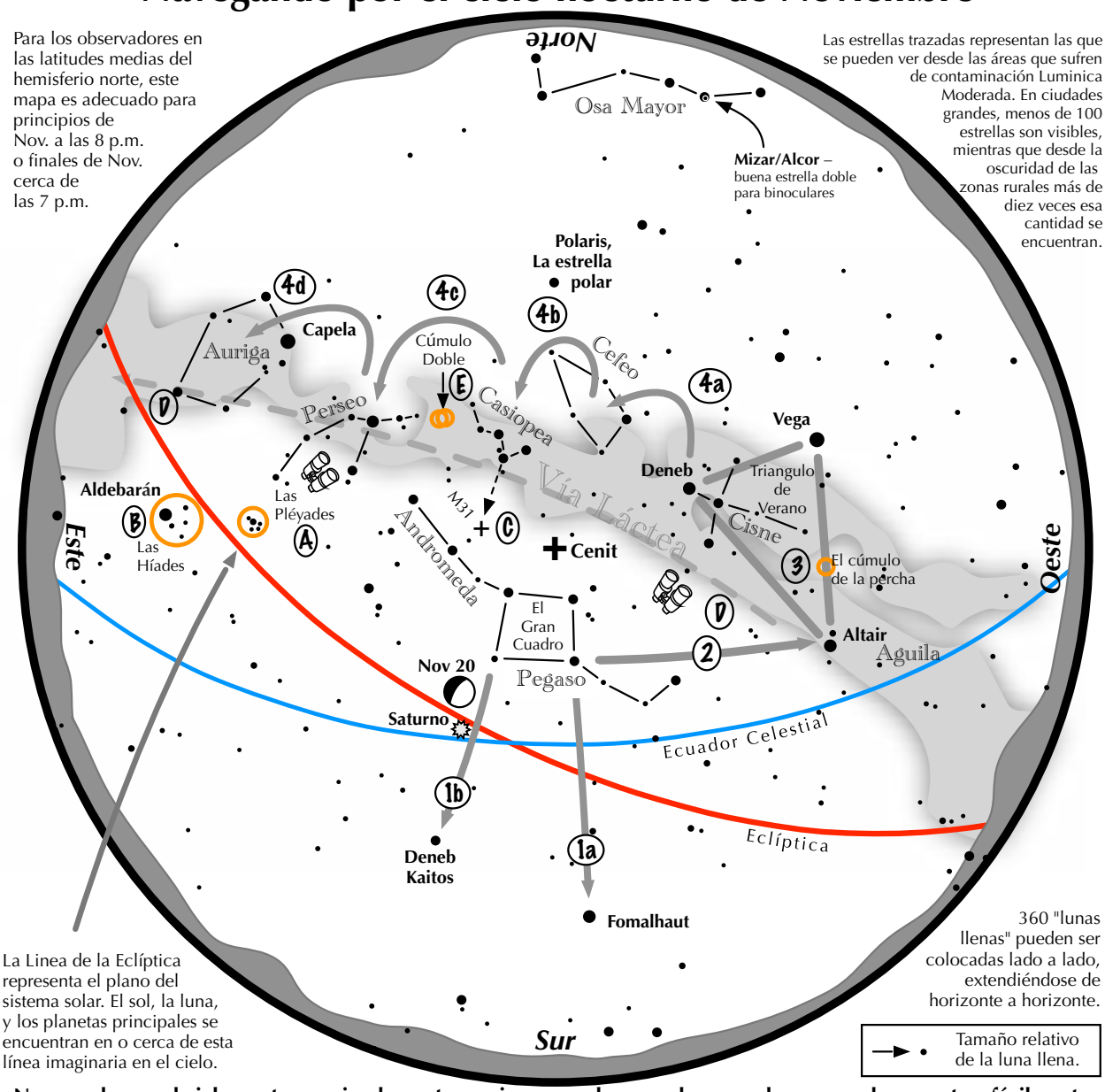
A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then 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 2026

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 Linea de la Eclíptica representa el plano del sistema solar. El sol, la luna, y los planetas principales se encuentran en o cerca de esta línea imaginaria en el cielo.

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.

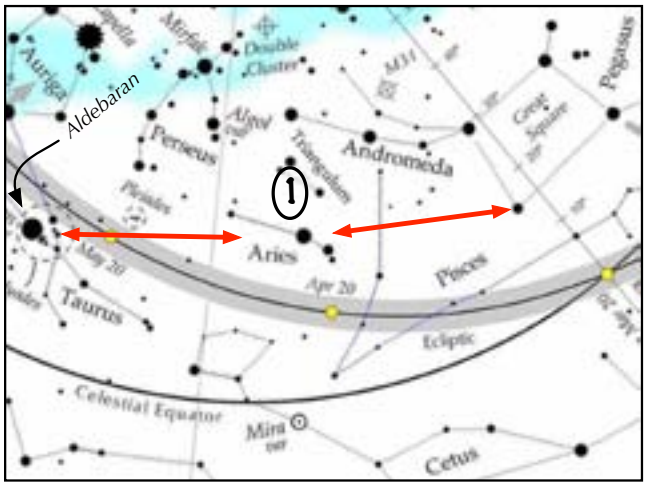
Destacan con Binoculares. A y B: examina las estrellas de las Pléyades y las Híades, dos cúmulos de estrellas a simple vista. **C:** Las tres estrellas más occidentales de la "W" de Casiopea apuntan hacia el sur hasta M31, la Galaxia de Andrómeda, un óvalo "borroso." **D:** Barrer a lo largo de la Vía 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.

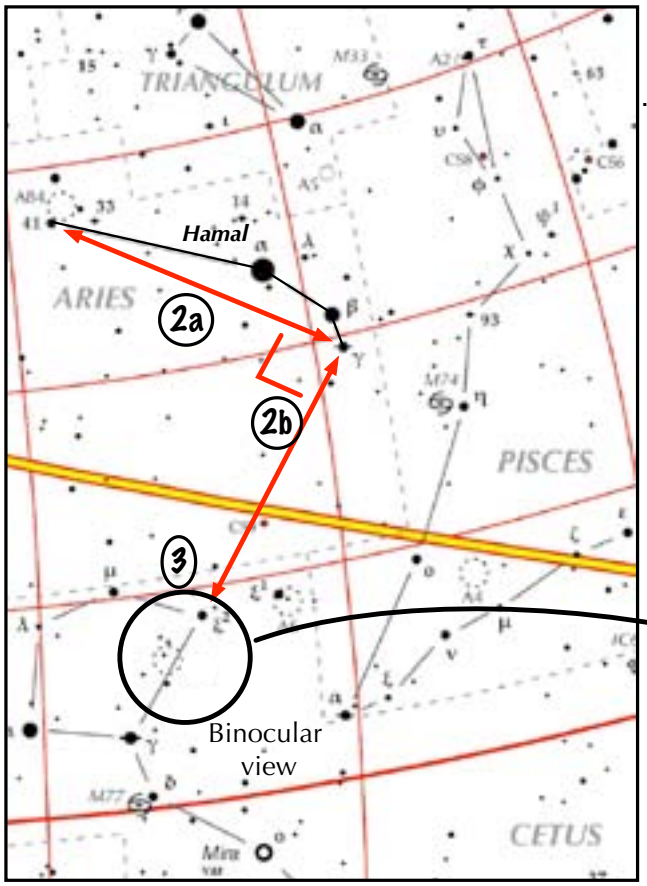
Traducción al español por Dr. Salvador Aguirre

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The Questionmark, an asterism for binoculars

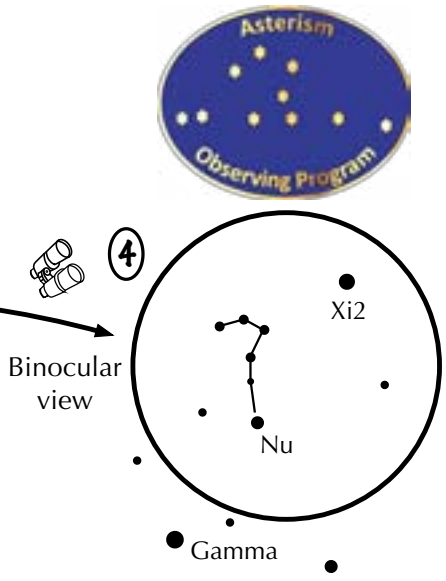
On the Astronomical League's Asterism list





How to find ...

1. Find Aries, which sits mid way between the Great Square in Pegasus and bright star Aldebaran in Taurus. Moderately bright Hamal (Alpha Arietis) is easy to spot, lying near the midway point. Find the dimmer stars Gamma and 41 Arietis.
2. Draw a line from Gamma to 41 and make another line of similar length extending 90° to the south–southeast of Gamma.
3. That line ends near Xi2. It occupies the northwestern vertex of the pentagon of Cetus' head.
4. Place Xi2 near the northwestern edge of the binocular field. The stars of the Questionmark are near the center of the field. These stars are arranged by chance, they are nowhere near each other in three-dimensional space.

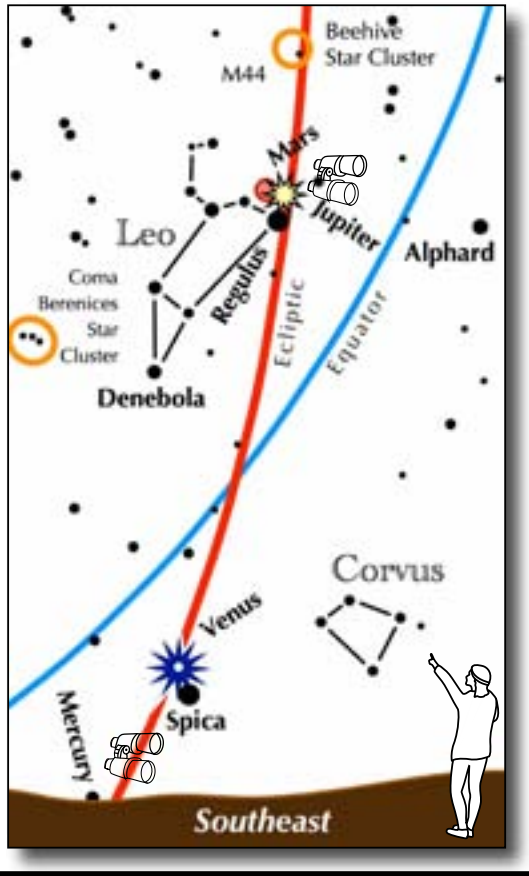


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2312

In the early mornings around November 15-18, try this activity:

Count the bright celestial wonders strung along the ecliptic



1. Red Mars meets bright Jupiter high in the southeast ninety minutes before sunrise. Grouped with them is the brightest star in Leo, Regulus.

2. Much nearer the southeastern horizon shines brilliant Venus sitting just above the bright star Spica.

3. 40 minutes before sunrise, little Mercury pops above the horizon, far below Venus. Binoculars help spot it in the bright twilight.

Grab a quick look at **Venus** through any telescope. Its beautiful, thin, and brilliant crescent awaits! As the mornings pass, the crescent grows smaller, but thicker.



View in the southeast
on November 15-18
90 minutes before sunrise

What a great way to start your day!

Member Proposal Committee – Let's Keep it Rolling

The Member Proposal Committee is off to a good start working with your proposals and getting them approved by the Club and implemented. WiFi at TDS, member workshops, sponsored prizes at the San Diego County Fair, swap meets, and outreach rewards have all been approved and most have been fully implemented with the others coming soon. Your ideas are becoming new programs and infrastructure that are improving our club.

While we have been very successful in getting proposals up and running, we are running out of projects. After an initial bow wave of ideas, new proposals have slowed to a slow drip. We need new ideas. Any proposals large or small are welcome and can be submitted at https://forms.gle/cDkCW5DNFh6ayVho9. We realize that this link isn't the most user friendly, but we are working to get the proposal system re-hosted on the main SDAA Website or on Wild Apricot. If you are having issues with the link, contact us at mark.smith@sdaa.org or sepi.gilani@sdaa.org and we can get you a pdf version of the form that can be filled out and e-mailed in.

We are also looking for new members of the Member Proposal Committee. Several of our members have become more involved with the SDAA on other committees or as members of the BOD and no longer have the time to devote to reviewing and mentoring member proposals. If you are interested in becoming a member, please contact mark.smith@sdaa.org or sepi.gilani@sdaa.org for more information.

Astronomical.League

on Facebook ...

Monthly sky maps,
Observing activities,
AL LIVE sessions,
League news & a whole lot more!

AL YouTube Channel

Observing Program Previews: What a program requires of the Observer.

Our View from Earth: How to find interesting celestial objects in three minutes. Perfect for club viewing.

SDAA Contacts

Club Officers and Directors

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Recording Secretary	Recording@sdaa.org
Treasurer	Treasurer@sdaa.org
Corresponding Secretary	Corresponding@sdaa.org
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Director Beta	DirectorBeta@sdaa.org
Director Delta	DirectorDelta@sdaa.org
Director Gamma	DirectorGamma@sdaa.org

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For more info:
https://sdaa.org/contacts/

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since April 2011
newsletter@sdaa.org
Assistant Editor: Craig Ewing

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 Board of Directors Meeting
September 8, 2026

1. **Call to Order**

The meeting was held via Zoom and was called to order at 7:02pm with the following BOD members in attendance: Dave Decker, President; Jim Love, Vice President; Mike Chasin, Treasurer; Kin Searcy, Recording Secretary; Ross Salinger, Corresponding Secretary; Damon Blackman, Director; Francisco Contreras, Director; Tom Kennedy, Director; Drew Koning, Director.

2. **Approval of Last Meeting Minutes**

The August meeting minutes V1.2 were approved by unanimous resolution. (Motion: M. Chasin/ Second: R. Salinger)

3. **Members Present**

Clint Ivy, Prascilla Morquecho, Bee Pagarigan, Emma Rodriguez, Woody Schlom, Gracie Schutze, and David Wood were present.

4. **Treasurer's Report**

Membership is 822. Material for the 2025 tax return has been forwarded to the CPA for preparation and filing. The treasurer's report was unanimously approved. (Motion: F. Contreras /Second: K. Searcy)

The BOD unanimously approved a motion to approve draft policies (privacy, terms of use, refund policy) that had been reviewed by legal counsel for the switch from PayPal to Wild Apricot Personify. (Motion: R. Salinger /Second: F. Contreras) Mike Chasin noted that counsel advised that online transactions require a clickable box rather than a simple statement of acceptance.

The BOD received and discussed the internal member audit report and thanked the committee for their good work. The BOD agreed to act on a recommendation that SDAA requests to the SDAA Foundation for funding should be more visible to the membership. **Action Item: BOD 09-01: M. Chasin develop recommendations to the BOD in October on ways to report SDAA Foundation funding to the membership.**

The SDAA Foundation is a controlled entity of SDAA. There was a general discussion about the relationship between the SDAA board and the SDAA Foundation board centered on legal independence, fiduciary duties of each organization, and handling of funding requests. Mike Chasin volunteered to obtain a legal explanation from SDAA counsel on these issues and provide legal contact information if BOD members need further information.

5. **Standard Reports**

As of the April meeting, the standard reports are being archived in an online directory and not documented in the minutes unless directed by the presiding officer. BOD discussion and action on specific committee reports will continue to be included in the minutes. Members can contact the BOD for access to the repository.

6. **Pending/Urgent Business**

a) Approval of UCSD Astronomy Club Dates and Process

The BOD unanimously approved a motion to approve E. Rumsey working with the UCSD Astronomy Club and the Facilities and Events Teams to set dates for the group to visit TDS and camp on-site as authorized in past years, including participating in the BBQ. (Motion: K. Searcy /Second: J. Love) Electrical work may preclude camping and E. Rumsey can request TDS-W.

For the SDAA waiver forms for the UCSD event, the BOD directed that E. Rumsey send the form to the astronomy club in PDF format and that the organizer shall bring the participant-signed forms to the event.

For TDS visitors who do not require prior BOD approval and submission of waiver forms, the BOD discussed signage like a public park bulletin board. **Action Item: BOD 09-02: The Facilities Team develop recommendations to the BOD on appropriate signage at TDS to address site rules, notice of cameras, privacy, red lighting, etc.**

b) Publication of TDS-W Policies

The combined Boards of the Foundation and SDAA have finalized the policies for the use of TDS-W, and the SDAA BOD approved the policy on-line by unanimous written consent prior to the August meeting. At present, there is no connectivity between Wild Apricot (for member sign up) and MyQ (gate/house access). **Action Item: BOD 09-03: D. Wood and D. Decker send a**

Wild Apricot blast to inform members of TDS-W policies as well as procedures for sign-up and set up a procedure to cut and paste Wild Apricot signups into MyQ.

c) Nominating Committee SDAA Board Election

R. Salinger has surveyed current SDAA and SDAA Foundation officers and directors and is developing a slate for the SDAA election and the designation of additional Foundation directors. He still needs additional election committee members.

7. New Business

a) Digital Infrastructure SPC Update

D. Blackman discussed key insights from the digital infrastructure survey that addressed digital sources of SDAA news. There are three primary channels of SDAA information - newsletter, Website and IO group - and information is not always synchronized across these sources. Not all members consider the IO group useful and prefer a better space for real-time discussion, topic-based channels, and community building. The BOD noted that the key is digital media that meets member preferences, has effective moderators, and coordinates information across media. The BOD questioned whether there is a technical solution or if the reasonable solution is a communications team approach. The digital infrastructure team is working on an assessment and recommendations.

b) TDS Network and Camera Project

J. Love has completed initial installation of network devices and cameras at TDS and TDS-W, and extension to the South private pad area will be done after the electrical work is complete. This installation was done in accordance with an MPC project approved by the BOD but before the Facilities Team had been stood up. There have been member comments on interior cabinet and camera placement, and the BOD unanimously approved a motion to have the Facilities team conduct an objective review of the installation, immediately turn off the camera that covers the entrance to the women's restroom, and establish redundant administrative access to the network. (Motion: K. Searcy/Second: D. Koning)

c) Facilities Team Chair

The BOD unanimously approved a motion to appoint Clint Ivy as chair of the Facilities Team. (Motion: K. Searcy/Second: F. Contreras)

d) Workplace Emails and Contacts

Committee and Team contact information need to be updated across all official sources and all committee/team chairs need official email. S. Myers needs to transfer his Google mail credentials so that T. Kennedy and others can accomplish this. R. Salinger graciously agreed to address this with Myers this weekend. **Action Item: BOD 09-04: R. Salinger will meet with Steve Myers to accomplish the Google credentials transfer.**

e) UCSD Engagement Proposal

The BOD has approved the UCSD proposal and considers the approval and notification made by F. Contreras sufficient for the SDAA Foundation to execute the funding transfer.

f) Action items Assigned

BOD 09-01: M. Chasin develop recommendations to the BOD in October on ways to report SDAA Foundation funding to the membership.

BOD 09-02: The Facilities Team develop recommendations to the BOD on appropriate signage at TDS to address site rules, notice of cameras, privacy, red lighting, etc.

BOD 09-03: D. Wood and D. Decker send a Wild Apricot blast to inform members of TDS-W policies as well as procedures for sign-up and set up a procedure to cut and paste Wild Apricot sign-ups into MyQ.

BOD 09-04: R. Salinger will meet with Steve Myers to accomplish the Google credentials transfer.

9. **Adjournment**: The meeting was adjourned at 9:18pm by unanimous resolution. (Motion: K. Searcy/Second: M. Chasin)

San Diego Astronomy Association

San Diego Astronomy Association Board of Directors Meeting

October 13, 2026 – Unapproved and subject to revision

1. **Call to Order**

The meeting was held via Zoom and was called to order at 7:05pm with the following BOD members in attendance: Dave Decker, President, Jim Love Vice President, Mike Chasin, Treasurer, Ross Salinger Corresponding Secretary, Francisco Contreras, Director, Damon Blackman Director, Tom Kennedy (late joined). Drew Koning, Director absent.

a. R. Salinger will be taking the responsibility for minuting the meeting.

b. BOD asked if there were any amendments to be made to the minutes. None were suggested.

c. Following on the last meeting minutes were approved by a 6-to-1 vote with F. Contreras making the motion and M. Chasin seconding it. Jim Love opposed.

2. Recording of resignations

a. Kin Searcy has submitted the necessary letter stating that he is stepping down from the SDAA

b. BOD Committee Vacancies

i. Nominating Committee Chair – D. Decker will identify nominees and volunteers. F. Contreras and D. Decker will review the By Laws regarding candidates for SDAA elected positions serving on the Nominating Committee.

ii. Member Projects Committee Chair – A motion was made to approve M. Smith and S. Gilani to step up and co-chair. Motion to approve was made by F. Contreras, M. Chasin seconded. Motion carried unanimously.

Iii. Events Committee Chair – Krista has resigned and this is open with no replacement identified

iv. Director of Cruzen Observatory – remains open.

v. Pad70 Director may require BOD approval. No motion made to the effect.

3. Members Present

Woody Schlom, Bee Pagarigan, Mark Smith, Priscilla Morquecho, Emma Rodriguez, Jeff Herman, Sepi Gilani

4. **Treasurer's Report**

It was noted that membership is static with a slight increase over the previous month from 822 to 830 members. The largest expense was $4590 for the ground floor storage unit used by the loaner program.

It was notable that the club has moved from using PayPal to Personify for payments processing. Last month 52 transactions were processed with only one member preferring to pay dues by check. This is mooted to save the club close to $2K over the coming year.

Motion was made to approve the treasurer's report by J. Love; D. Blackman seconded and was approved unanimously.

While researching lapsed members on the toll for tax Return purposes M. Chasin discovered that a member is paying to have a pier at one of the private observatories. For profit activities at the private observatories could jeopardize the club's tax-exempt status, as well as the property tax exemption, per attorney Karl Mill. Until this issue is resolved, the property tax exemption cannot be filed. It is due 2/15/2027. It was decided that D. Decker will set up a meeting to discuss next steps regarding this issue and any other issues arising with regards to the private observatories.

5. Standard Reports

The standard reports will be archived in an online directory at:

https://drive.google.com/drive/folders/1mBbakp6qiFDjgz1DX46wLfKzdfdh-_vQ.

They will not be documented in the minutes. BOD discussions and actions on specific committee reports will continue to be included in the minutes.

6. **Pending/Urgent Business**

a. Meeting Decorum and Rules were discussed. Three options were proposed. A motion was made to approve the previously mooted Code of Conduct for the San Diego Astronomy Association by M. Chasin, R Salinger seconding. This was approved unanimously by the BOD. It was noted that modifications may be necessary at a future date in time.

b. Nominations and Announcement of Candidates for the BOD elections. Nominations will be disclosed on 10/21 at the SDAA program meeting. Members may nominate additional candidates from the floor at the meeting. If there is only one candidate per office the slate can then simply be adopted and no election is then necessary. It may be that some have only one candidate, but others will require an election.

7. New Business

a. Member Projects Committee- M. Smith and S. Gilani will run this on an interim basis.

b. Events team – D. Blackman will run this and need to get what's in the pipeline from the previous chairperson. It was noted that there is a need to reschedule the barbecue.

c. Strategic Planning Committee- D. Blackman recommended hiring a consultant to address the need for a full-time or shared resource to work as an executive director or an operations manager. It might be possible to get a sharing arrangement to keep the cost down.

d. Pad69 – There was a proposal made by M. Smith to transfer Pad 69 to new lessees (A. Beck, F. Contreras). A motion was made to approve the transfer by M. Chasin and seconded by R. Salinger, the motion passed (with F. Contreras recused) unanimously.

e. Membership Projects Committee – M. Smith made a proposal for the SDAA to sponsor the night sky photography category and prize at the SDAA County Fair. The commitment if for 5 years at a cost $650. It was generally held by the BOD that this is an excellent way to promote the club. A motion to approve the funds was made by J. love with D. Blackman seconding. Motion was approved unanimously by the BOD.

f. Loaner scopes – it was noted by P Krizak that there is a large backlog of donated equipment that needs to be examined and repaired. He needs some volunteers to do the work. No action taken.

g. Other New Business – none.

8. Action Items

a. Wild Apricot Protocol Waivers/gate codes – no action taken. It was noted that D. Wood has approved 100 members access to TDS West, but nothing has been done about using Wild Apricot as a means to control access.

b. Update All WorkPlace Email – per D. Blackman, all required access to the WorkPlace has been granted.

c. It was noted that coyotes are now roaming inside TDS East. Members should exercise caution when walking around at night.

d. D. Decker will set up a meeting to discuss next steps regarding the tax issues and any other issues arising with regards to the private observatories.

e. F. Contreras, M. Chasin, D. Decker will finalize the previous Code of Conduct intended for use with social media and Groups actions and publish the previously produced and now approved Code of Conduct for general use.

f. J. Love and D. Decker will research appropriate abbreviated version of Robert's Rules for adoption as a general meeting governance policy for the SDAA.

g. D. Blackman and T. Kennedy will assist with assignment of delegated email addresses as needed.

9. Adjournment:

The meeting was adjourned by unanimous resolution at 915pm. Motion by D Decker/Second J Love.



October 2026 Pad 70 Report

The Pad70 system had two members run the system remotely during the month. Support was minimal. I trained a member who had never used NINA before in about 3 hours. He was able to use the systems for several nights with only one hiccup, easily fixed, issue.

Members remain happy with the sequences, the hardware and the data collected. The system is now booked up through the end of March.

I upgraded the google driver to 2 TB as my own expense. It's nice to be able to keep the data for several months. If the club wants a real archive, that would be something that might make sense.

I took the Edge11 up to Celestron and had it cleaned and collimated. As soon as I can get a helper, I can switch it in for a couple of months to see if it's better/worse than the AP155 refractor.

Members can now choose between using a narrow band filter and doing wide band imaging through a luminance filter. The month has seen a mixture.

I completed an inventory of everything that John Downing donated. That was overdue and I segregated all club equipment from what I was lending out. I'd love to sub in the unused Takahashi from the Cruzen observatory at some point.

Astro 101 Moon Night

Hosted by AISIG and Francisco Contreras

Around 60 people gathered at the peak of our October 24 Astro 101 Moon Night at Jim Wood Park in Oceanside, with more stopping by throughout the evening. An amazing turnout for a North County event.

We embraced a target that deep-sky astrophotographers often try to avoid: the Moon. A beginner-friendly presentation covered lunar history, recognizable landmarks and why photographing the Moon can be surprisingly tricky. We also explored imaging techniques, from phones through telescope eye-pieces to smartscopes, video stacking and sharpening.

Several members took their first astrophotographs that night. Others came to chat, look through a tele-scope or experiment with their equipment. Cookies and hot chocolate helped keep things comfortable.

The evening was also a reminder that moonlit nights are useful opportunities to practise. Testing auto-focus, sorting out a new accessory or simply getting familiar with a setup can make the next moonless night much more productive.

Some attendees discovered the event through social media and joined SDAA because of it. A big thank-you to the social media team for getting the word out, and to everyone who came by and helped make it a welcoming evening.

More Astro 101 events to come.

NASA's Night Sky Network (NSN) distributes this article.
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!

November's Night Sky Notes: Light-Day Away

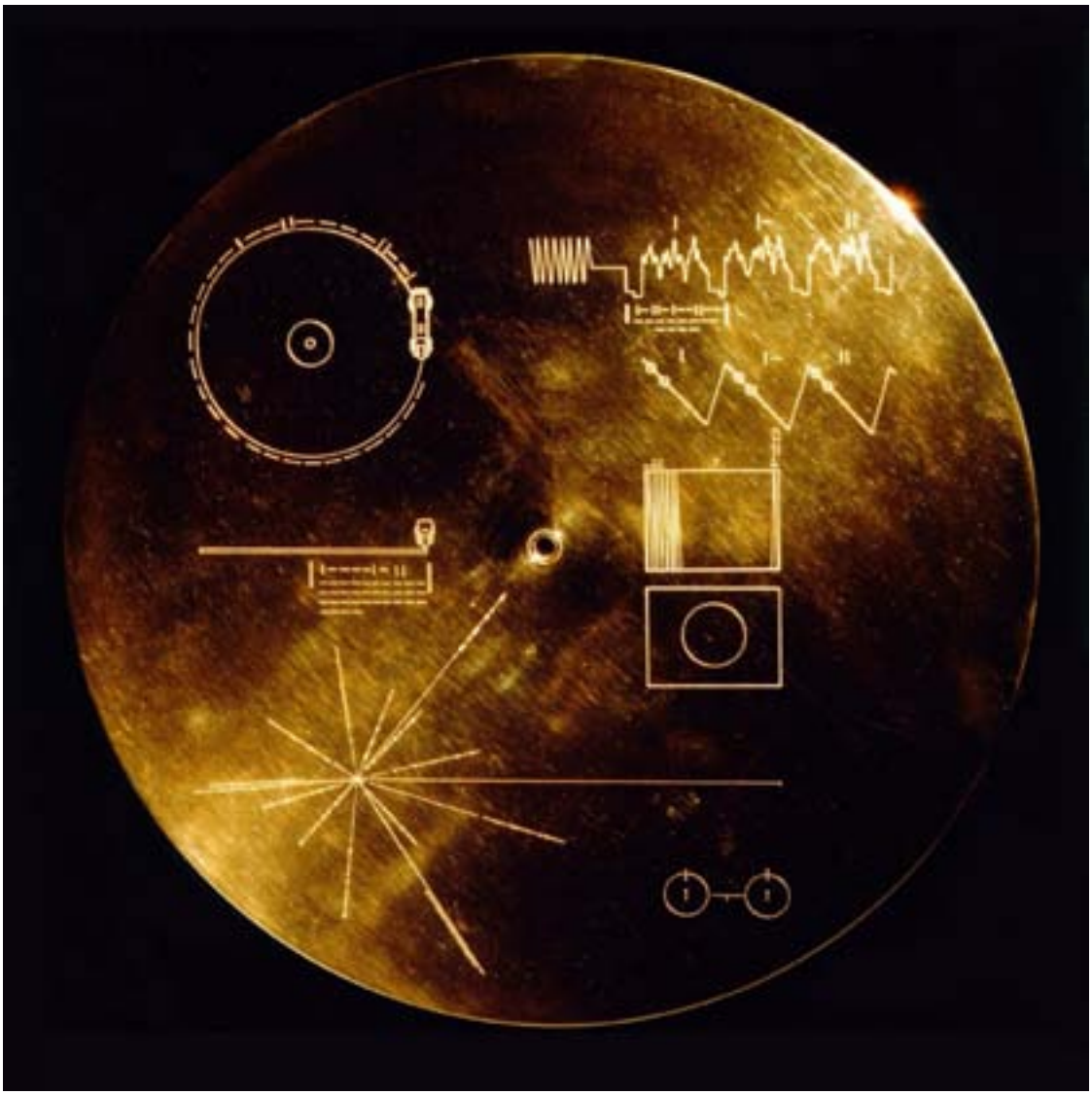
By Kat Troche



A travel poster of The Grand Tour. Credit: NASA/JPL

Twin Travelers

In 1977, NASA launched twin spacecraft Voyager 1 and 2, taking advantage of a once-every-175-year planetary alignment of the four largest planets in our solar system: Jupiter, Saturn, Uranus, and Neptune. Using six gravity assists between them, this Grand Tour gave us up-close views of the gas and ice giants, including several moons. By the 1980s, the two probes went their separate ways at Saturn. As Voyager 2 continued toward Uranus and Neptune, Voyager 1 grabbed one more portrait of the solar system (excluding Mercury and Mars), including a final image of the pale blue dot we call home.



The Golden Record cover shown with its extraterrestrial instructions. Credit: NASA/JPL-Caltech

Playlist

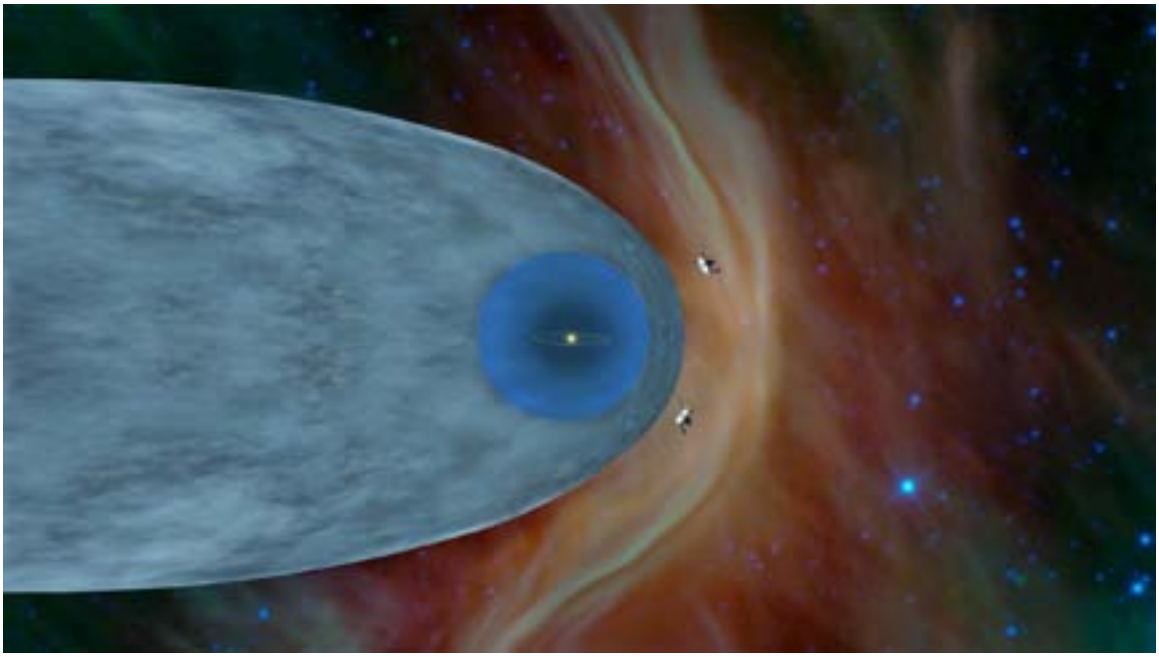
“Hello from the children of planet Earth.”

Every good road trip needs some music to match. In this case, each craft carries the Golden Record, a 12-inch phonograph record with spoken greetings in 55 languages, 27 musical tracks, 116 images, and other sounds from Earth. Each record is protected by an outer cover featuring etchings showing our Sun's location relative to 14 pulsars, along with instructions on how to play it. The design used various metals to protect the information encoded from space radiation: the record used copper and gold plating, and the cover used aluminum. The cover was electroplated

with an ultra-pure sample of the isotope uranium-238. Uranium-238 has a half-life of 4.468 billion years.

Are We There Yet?

Did you know that a light-minute is a measure of distance, not time? In August 2012 and November 2018, Voyager 1 and 2 crossed the heliopause, the boundary where the Sun's solar wind meets the interstellar medium. Using NASA's Deep Space Network, Earth communicates with both spacecraft and tracks each on its journey. At the time of this article, the Canberra antenna tracked Voyager 1 at 25.80 billion km, or just over 16 billion miles.



This illustration shows the positions of NASA's Voyager 1 and Voyager 2 probes outside the heliosphere, a protective bubble created by the Sun that extends well past Pluto's orbit. The red wave in front of the light blue heliopause is the bow shock. Credit: NASA/JPL-Caltech.

On November 18, 2026, 49 years after its launch, Voyager 1 will cross the one-light-day mark, 16.1 billion miles from the Sun. You may have heard the term *light-year* in your favorite sci-fi movie or show, or when stargazing and referring to an object outside of our solar system. This video best demonstrates the different distances between the inner solar system, outer solar system, and beyond, using light measurements. Additionally, track each Voyager spacecraft here.

You can get a real understanding of what a gravity assist might be like with our Gravity Assist activity and learn what it's like to measure a "light minute" with our Measuring a Kid Minute activity guide!

San Diego Astronomy Association

2026 TDS Star Party Schedule

Date	Type	Sunset	Astro. Twi.	Moonrise(set)	Closing	Illumination	Hosts
Jan-10-26	Public	4:58 PM	6:25 PM	12:42 AM	9:30 PM	51.1%	Ed Rumsey
Jan-17-26	Member	5:04 PM	6:30 PM	6:56 AM	9:30 PM	1.2%	Ed Rumsey
Feb-07-26	Public	5:23 PM	6:47 PM	11:28 PM	10:00 PM	69.1%	Jim Traweek & Jannet
Feb-14-26	Member	5:30 PM	6:53 PM	5:31 AM	10:00 PM	8.0%	Ed Rumsey
Mar-14-26	Member	6:52 PM	8:14 PM	5:03 AM	11:00 PM	20.3%	Igor von Nyssen
Mar-21-26	Public	6:57 PM	8:20 PM	(10:19 PM)	11:30 PM	10.8%	Ed Rumsey & Dave Wood
Apr-11-26	Public	7:12 PM	8:37 PM	3:32 AM	11:30 PM	36.3%	Ed Rumsey & Kin Searcy
Apr-18-26	Member	7:17 PM	8:44 PM	(9:13 PM)	12:00 AM	2.9%	Jim Traweek & Craig Ewing
May-09-26	Public	7:32 PM	9:05 PM	2:01 AM	12:00 AM	53.2%	Jim Traweek
May-16-26	Member	7:37 PM	9:12 PM	(8:03 PM)	12:00 AM	0.2%	Ed Rumsey & Kin Searcy
Jun-06-26	Public	7:50 PM	9:31 PM	12:31 AM	12:30 AM	69.0%	Ed Rumsey & Kin Searcy
Jun-13-26	Member	7:53 PM	9:35 PM	4:47 AM	12:30 AM	3.1%	Steven Myers
Jul-11-26	Member	7:55 PM	9:34 PM	3:30 AM	12:30 AM	10.8%	Ed & Kate Rumsey
Jul-18-26	Public	7:52 PM	9:29 PM	(10:47 PM)	12:30 AM	25.7%	Bob Roth
Aug-08-26	Public	7:37 PM	9:07 PM	2:19 AM	12:00 AM	22.1%	Ed Rumsey & Kin Searcy
Aug-15-26	Member	7:29 PM	8:58 PM	(9:14 PM)	12:00 AM	12.6%	Jim Traweek
Sep-05-26	Public	7:04 PM	8:28 PM	1:15 AM	11:30 PM	35.5%	Bob Roth
Sep-12-26	Member	6:55 PM	8:18 PM	(7:41 PM)	11:30 PM	3.6%	Paul Krizak
Oct-03-26	Public	6:27 PM	7:48 PM	12:17 AM	11:00 PM	50.0%	Mark Eby
Oct-10-26	Member	6:18 PM	7:39 PM	7:50 AM	10:30 PM	0.1%	Paul Krizak
Nov-07-26	Member	4:49 PM	6:13 PM	5:40 AM	9:30 PM	2.5%	Bob Roth
Nov-14-26	Public	4:44 PM	6:09 PM	(9:06 PM)	9:00 PM	27.2%	Jim Traweek
Dec-05-26	Member	4:39 PM	6:06 PM	4:33 AM	9:00 PM	10.3%	
Dec-12-26	Public	4:40 PM	6:08 PM	(7:57 PM)	9:00 PM	13.1%	

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 $70 for Contributing Memberships; $40 for Basic Membership; $70 for Private Pads; $5 for each Family membership.