The Sonora Astronomical Society's
SONORAN STARRY NIGHTS

DECEMBER 2025

December Meeting Details

DATE: Saturday, December 20th, 2025
MEETING TIME: 2:30 PM (2:00 access)
PLACE: Sahuarita Library & Zoom
MEETING SCHEDULE:
(2:15 PM ZOOM Waiting Room Available)
2:30 Meeting Intro and Welcome
2:40 Featured Presentation Followed by Club Activities/Business

Next Member Star Parties

DATE: Thursday, December 18th, 2025
TIME: 5:15 PM *NEW LOCATION*
PLACE: Madera Canyon Parking Lot
(300 ft past 9 mile marker, Madera Canyon Rd)

- LOOKING AHEAD -
THE FOLLOWING STAR PARTY WILL BE:
DATE: Thursday, January 15th, 2026
TIME: 5:30 PM
PLACE: Madera Canyon Parking Lot

NOTE: If you have a telescope that you don't know how to use, or are looking to buy a telescope and want to compare different telescopes, join us at a star party and we can give you some help.

UPCOMING EVENTS

NEXT CLUB MEETING
DATE: **Saturday January 17th, 2026**
LOCATION: Sahuarita Library & Zoom
TIME: **2:30 PM (in person + Zoom)**
Speaker: **T B A**
Subject: **T B A**

December Presentation

Speaker: Speaker and topic will be announced at the meeting.

Subject: The presentation will be an interesting astronomy-based video followed by a round table discussion.
Abstract: .
Biography:

WHAT'S NEXT?

NASA has resumed its outreach activities following the budget shutdown. The YouTube channel holds many interesting current and past videos to watch.

Night Sky Network has a live YouTube Webinar each month (and a video that can be viewed if you missed the live presentation) featuring an interesting array of subjects.

The December 11th presentation will be:
2025 Astronomy Picture of the Day
with **Dr. Robert Nemiroff**

Viewing of and details on this presentation are on YouTube by clicking:

https://www.youtube.com/@NASANightSkyNetwork

Then look for the presentation (should be first shown).

SONORAN STARRY NIGHTS

PRESIDENTS NOTES

Greetings everyone,

Our December meeting will take place on December 20th at the Sahuarita library (670 Sahuarita Rd). There is parking behind the library. The meeting room is just to the left as you enter the front door. The meeting will officially start at 2:30pm this month with ZOOM login available by 2:15pm. If anyone has any suggestions for meeting presentations or knows someone we can bring in for a presentation, please let me know.

We had a few members come to the November club star party. However, it was a very short one. At sunset, the sky was very clear. By the time I had set up my equipment and was ready to start imaging, the sky had basically clouded over. We packed up and went home.

There are no public star parties this month.

We no longer have access to Canoa Preserve Park for our club star parties. We are now using our new site which is on the way up to Madera Canyon. There is a map to our new site available on our website. Our December club star party is scheduled for the 18th. Again, check our website for details. If you have any questions about the site, let me know.

Stay safe,

John Dwyer
President

IN THIS ISSUE

MEMBER EQUIPMENT FOR SALE

Have a telescope or other astronomy equipment for sale? Contact John Dwyer with your item(s) to get them listed here.

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The SAS website has a good one-page article from Sky & Telescope that can help get you started. Copy and paste this link:

https://sonoraastronomicalsociety.org/newsletters/

Basic monthly star charts are now available. Look on the website Home page yellow banner.

The website also has a list of suggestions of Planetarium Apps for your phone, several FREE!

SONORAN STARRY NIGHTS

THE DECEMBER SKY

SKY HIGHLIGHTS FOR DECEMBER

The evening night sky still has a good number of planets this month. **Saturn** is just east of south when the Sun sets. Its ring system is almost edge-on now. **Neptune** is still trailing about 5 degrees behind Saturn. **Mars** is too close to the Sun to see now. **Jupiter** will rise about 9pm at the beginning of the month and 7pm at the end of the month. It will reach opposition early next month. **Uranus** reached opposition last month and will be visible most of the evening. **Venus** will be too close to the Sun for viewing as it reaches superior conjunction early next month. **Mercury** is in the morning sky most of the month and will reach greatest western elongation on the 7th.

On the 14th the Geminid meteor shower will occur. This is one of the better showers of the year, generating some very bright fireballs at times.

The visibility of comets is waning this month. Comet C/2025 A6 (Lemmon) has moved into the southern skies and is no longer visible here. Comet C/2025 R2 (Swan) has faded below 10th magnitude and will be difficult to view. Comet 25P/Shaumasse, currently in Leo, is brightening and will reach mag 8.5 early next month.

If you have any solar viewing equipment, the Sun is extremely active now as it has officially reached maximum. As it is getting a little cooler now, break out the solar equipment and take a peek.

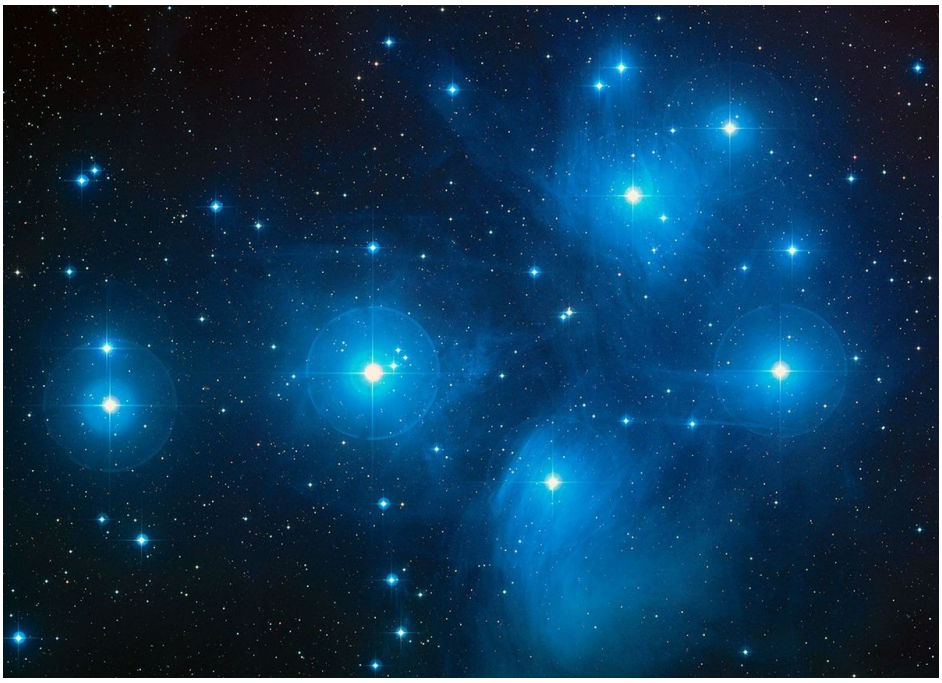
DECEMBER MOON/SUN TIMES

DATE	M-Rise	M-Set	M-Phase	Sun-set	Star Party
Mon 12/01	14:40	3:15		17:18	
Tue 12/02	15:17	4:27		17:18	
Wed 12/03	16:03	5:42		17:18	
Thu 12/04	16:58	6:59		17:18	
Fri 12/05	18:03	8:12		17:18	
Sat 12/06	19:14	9:18		17:19	
Sun 12/07	20:26	10:12		17:19	
Mon 12/08	21:36	10:56	1st Qtr	17:19	
Tue 12/09	22:41	11:32		17:19	
Wed 12/10	23:42	12:02		17:19	
Thu 12/11	-----	12:29		17:19	
Fri 12/12	0:40	12:55		17:20	
Sat 12/13	1:36	13:20		17:20	
Sun 12/14	2:32	13:47		17:20	
Mon 12/15	3:28	14:15	Full	17:21	
Tue 12/16	4:25	14:48		17:21	
Wed 12/17	5:23	15:25		17:21	
Thu 12/18	6:20	16:08		17:22	S.A.S. SP
Fri 12/19	7:16	16:58		17:22	
Sat 12/20	8:08	17:53		17:23	Meeting
Sun 12/21	8:54	18:52		17:23	
Mon 12/22	9:35	19:53	3rd Qtr	17:24	
Tue 12/23	10:10	20:54		17:24	
Wed 12/24	10:42	21:55		17:25	
Thu 12/25	11:11	22:56		17:25	
Fri 12/26	11:38	23:57		17:26	
Sat 12/27	12:07	-----		17:27	
Sun 12/28	12:37	1:01		17:27	
Mon 12/29	13:11	2:07		17:28	
Tue 12/30	13:51	3:18	New	17:29	
Wed 12/31	14:40	4:32		17:29	

(S)=Solar

This article made available by NASA

NASA's TESS Spacecraft Triples Size of Pleiades Star Cluster



These young, hot blue stars are members of the Pleiades open star cluster and resides about 430 light-years away in the northern constellation Taurus. The brightest stars are visible to the unaided eye during evenings from October to April. A new study finds the cluster to be triple the size previously thought — and shows that its stars are scattered across the night sky. The Schmidt telescope at the Palomar Observatory in California captured this color-composite image. NASA, ESA and AURA/Caltech

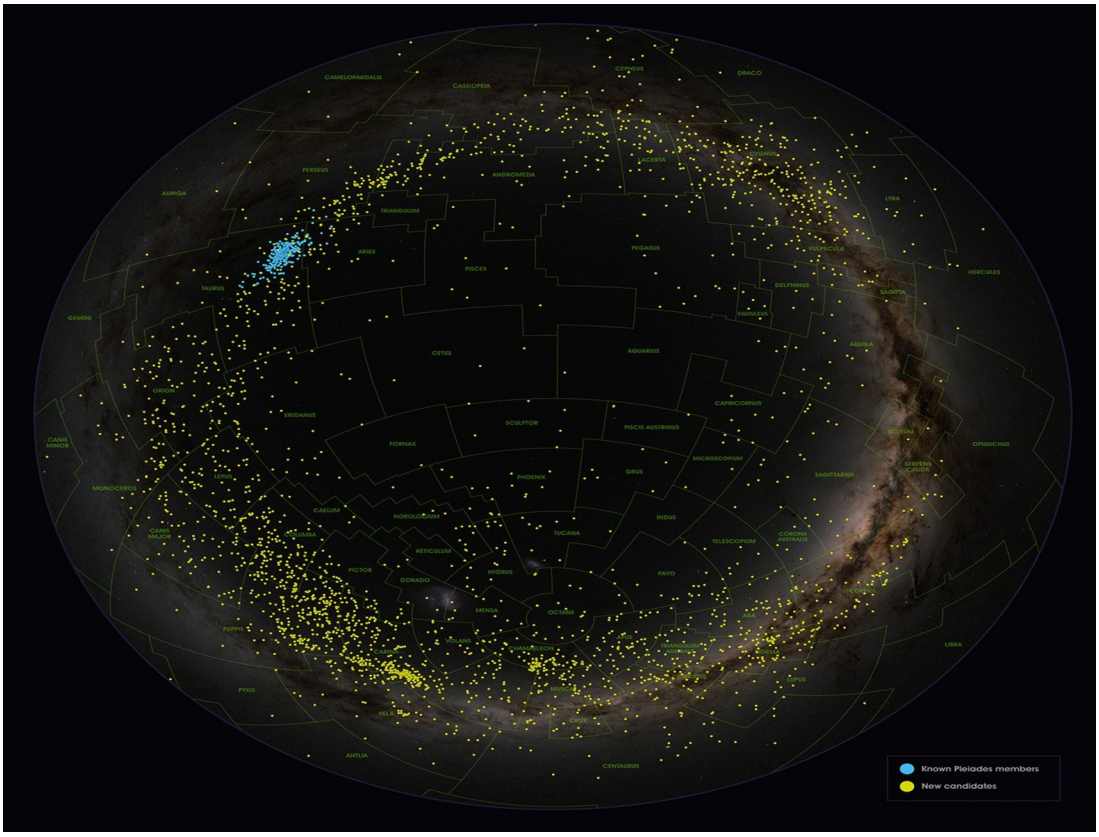
Astronomers have revolutionized our understanding of a collection of stars in the northern sky called the Pleiades. They used data from NASA's TESS (Transiting Exoplanet Survey Satellite) and other observatories as NASA explores the secrets of the universe for the benefit of all, from the Moon to Mars and beyond.

By examining the rotation, chemistry, and orbit around the Milky Way of members of several different near-by stellar groups, the scientists identified a continuum of more than 3,000 stars arcing across 1,900 light-years. This Greater Pleiades Complex triples the number of stars associated with the Pleiades and opens new approaches for discovering similar dispersed star clusters in the future.

"The Pleiades are very well studied — we often use them as a benchmark in astronomical observations," said Andrew Boyle, a graduate student at the University of North Carolina at Chapel Hill. "When I started this re-search, I didn't expect the cluster to balloon to the size that it did. It really touches on a human note. In the Northern Hemisphere, we've been looking up at the Pleiades and telling stories about them for thousands of years, but there's so much more to them than we knew."

A paper about the result, led by Boyle, published Wednesday, Nov. 12, in the Astrophysical Journal.

(Continued next page)



This image shows two-thirds of the night sky, illustrating the vast extent of the Greater Pleiades Complex. Original stellar members of the Pleiades, sometimes called Messier 45, appear as blue dots. Newly identified members are in yellow. The constellations are outlined and labeled in green. NASA's Goddard Space Flight Center; background, ESA/Gaia/DPAC; Boyle et. al. 2025

The Pleiades is a bright cluster of stars, also known as Messier 45. This loose grouping of about 1,000 members was born roughly 100 million years ago from the same molecular cloud, a cold dense patch of gas and dust.

About six of the stars in the cluster are visible to the unaided eye during evenings from October to April in the northern constellation Taurus. This collection has also been known since antiquity as the Seven Sisters, although the seventh star is no longer visible.

Boyle and his team initially identified over 10,000 stars that could be related to the Pleiades. These stars were orbiting at a similar rate around our Milky Way galaxy according to data from ESA's (European Space Agency) Gaia satellite.

They narrowed down that collection using stellar rotation data from TESS.

NASA's TESS mission scans a wide swath of the sky for about a month at a time, looking for variations in the light from stars to spot orbiting planets. This technique also allows TESS to identify and monitor asteroids out to large distances, determining their spin and refining their shape. Such observations improve our understanding of asteroids in our solar system, which can aid in planetary defense.

Scientists can also use TESS data to determine how fast the stars are rotating by looking at regular fluctuations in their light caused when dark surface features called star spots come in and out of view.

(Continued next page)

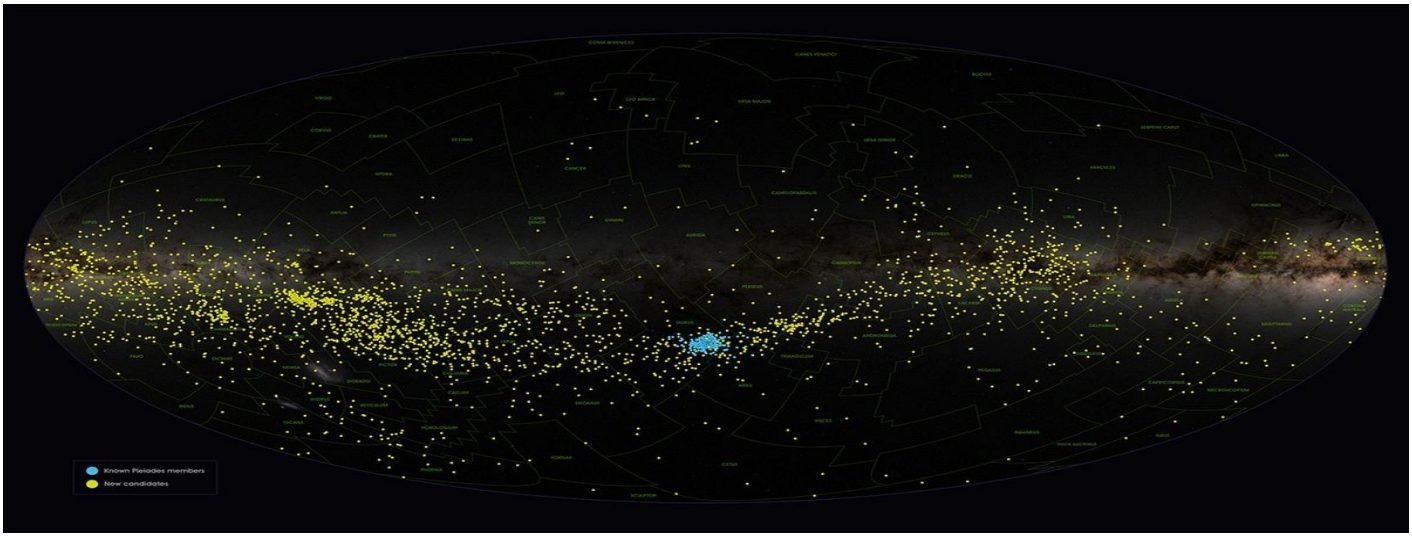
Because stellar rotation slows as stars age, the researchers were able to pick out the stars that were about the same age as the Pleiades.

The team also looked at the chemical abundances in potential members using data from ground-based missions like the Sloan Digital Sky Survey, which is led by a consortium of institutions.

"The core of the Pleiades is chemically distinct from the average star in a few elements like magnesium and silicon," said Luke Bouma, a co-author and fellow at the Carnegie Science Observatories in Pasadena, California. "The other stars that we propose are part of the Greater Pleiades are chemically distinct in the same way. The combination of these three major lines of evidence — Milky Way orbits, ages, and chemistry — tells me that we're on the right path when making these connections."

The team members think that all the stars in the Greater Pleiades Complex formed in a tighter collection, like the stars in the young Orion cluster, about 100 million years ago. Over time, the cluster dispersed due to the explosive forces of internal supernovae and from the tidal forces of our galaxy's gravity.

The result is a stream of stars arcing across the sky from horizon to horizon.



This image shows an all-sky view of the Greater Pleiades Complex with the plane of our Milky Way running through the middle. Members of the original open cluster are in blue, and new members are in yellow. The constellations are outlined and labeled in green.

NASA's Goddard Space Flight Center; background, ESA/Gaia/DPAC; Boyle et. al. 2025

Boyle and Bouma are now working on what they call the TESS All-Sky Rotation Survey. This database will allow researchers to access the rotation information for over 8 million stars to discover even more hidden stellar connections like the Greater Pleiades Complex.

"Thanks to TESS, this team was able to shed new light on a fixture of astronomy," said Allison Youngblood, the TESS project scientist at NASA's Goddard Space Flight Center in Greenbelt, Maryland. "From distant stars and planets to asteroids in our solar system and machine learning models here on Earth, TESS continues to push the boundaries of what we can accomplish with large datasets that capture just a part of the complexity of our universe."

SONORAN STARRY NIGHTS

S.A.S. CLUB OFFICERS

OFFICE/POSITION	NAME	PHONE NO.
Chairman of the Board	Open	
President	John Dwyer	(520) 393-3680
Secretary	Michael Moraghan	(520) 399-3352
Treasurer	John McGee	(520) 207-6188
Star party Coordinator	Open	(520) 303-6920
Newsletter Editor	Joe Castor	(**6**20) 584-4454
Webmaster	Joe Castor	(**6**20) 584-4454
ALCOR* (Currently Inactive)	Inactive	(520) 396-3576
NSN** Representative	Open	(520) 303-6920
Past President Emeritus	Open	
*Astronomical League		
**Night Sky Network		

WHY JOIN SAS

1. SAS Family Membership Fee is only $25.00 per year.
2. SAS monthly newsletter "The Sonoran Starry Nights."
3. Top-quality astronomy lectures by local astronomers!
4. SAS Discount for Astronomy Magazine $34.00 for 1yr or $60.00 for 2 yr renewed through our treasurer.
5. SAS Discount subscription rate for Sky & Telescope Magazine — self-renewed.
6. RASC Observer's Handbook at a discount, $30.00.
7. SAS T-Shirts for sale for $10.00—M, L, XL.
8. Member of International Dark-sky Association (IDA).
9. SAS Discount for Astronomy 2020 Calendar $10.00
10. SAS monthly Member Star Parties.
11. SAS Telescope and astronomy book loan programs.
12. SAS outreach to astronomy education in schools.
13. SAS fellowship with other amateur astronomers!

CLUB DUES

Dues (family or individual) are $25 annually, payable each year in the month you initially joined the club. You will receive a reminder in the monthly newsletter e-mail of your due date. You can either pay at the club meeting or mail it to the club's address (S.A.S., P.O. Box 1081, Green Valley, AZ, 85622).

SAS WEBSITE

If you want to keep up-to-date with club activities, such as star parties, etc., check out our website (and Calendar) at:
HTTPS://sonoraastronomicalsociety.org

SAS STATISTICS & FINANCES

Lifetime Members:	1
Individual & Family Members:	101
Total Membership:	**102**

Bank Balance as of Oct. 31	$ 1,400.96
Deposits / (D/Ws):	$ 125.00 / ($ 0.00)
Bank Balance as of Nov 30:	**$1,525.96**

LOCAL ASTRO-IMAGING GROUP: Sonoran Desert Astro Imagers (SDAI), Larry Phillips, Coordinator

Are you interested in Astrophotography or are you currently involved in imaging the skies? If so, you are invited to join the Sonoran Desert Astro Imagers group. Our meetings focus on improving our skills, helping each other, workshops, and field trips. We meet on Thursdays at 9 AM. The meetings are on Zoom, except once-a-month we get together in-person at the Quail Creek Conference Center. Email notifications are sent to members before each meeting.
Please send your Name and E-mail address to my address below and we'll include you in the emailing notices of monthly meetings; "the when and where meeting notice." Do you have any questions? If so, call me (Larry Phillips) at (520) 777-8027 or email to llp41astro@cox.net. Clear Skies! Larry Phillips

ABOUT THE ASTRONOMICAL LEAGUE

While SAS is no longer an active member of the Astronomical League, a SAS member may join the Astronomical League as an at-large member. What are the advantages to joining the AL?
1. You can receive various observing awards by joining an "observing club" and observing the required number of objects. There are all levels of clubs from beginner to advanced, viewing constellations to deep-sky objects and using either your naked eyes, binoculars, or a telescope. Contact our ALCOR rep Burley Packwood for details.
2. You can get a 10% discount on books purchased through the AL Book Service.
3. You will receive the AL's quarterly "Reflector" magazine which keeps you up to date on all the AL activities.
More info at www.astroleague.org

SAS IS A MEMBER OF IDA

SAS is proud to be a member of the International Dark-Sky Association, supporting the reduction in light pollution around the U.S. and the world.
More info at www.darksky.org

SAS NON-PROFIT STATUS

The Sonora Astronomical Society is a 501 (c) (3) nonprofit charitable organization! SAS has a CERTIFICATE OF GOOD STANDING from the State of Arizona Corporation Commission!

MAGAZINE SUBSCRIPTIONS

To renew your Sky and Telescope Magazine at the Club Rate, you can go directly to their website, or to order it new, or to order or renew Astronomy Magazine, contact the Club Treasurer.

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