



Ephemeris

The Official Newsletter of the Prescott Astronomy Club (PAC)
e-phem-er-is: a time-based listing of future positions of solar system objects.

November 2023



Original Photo: Lucas Pezeta

General Meeting of the Prescott Astronomy Club

Wednesday, November 1, 2023, at 6:00pm
Prescott Public Library - Founders Room

This is the last meeting of the year. Club officers for 2024 will be elected & we will review new club business, initiatives & events for the year to come.

Bring your ideas for the future of the club, we welcome feedback & need your participation!

Prescott Astronomy Club Holiday Party

Wednesday, December 6th, 2023, at 6:00pm
Arizona Room at the Hassayampa Inn in Prescott

The Prescott Astronomy Club will not meet at the Library in December. Instead, we are having a **Holiday Party** on Wednesday, December 6th. Show up for drinks & socializing at 6pm at the Hassayampa Inn, Arizona Room in downtown Prescott. The cost is \$40 a person & includes a salad, water/tea/coffee, full dinner entree, & dessert. A cash bar will be available with wine, beer, & mixed drinks. There will be door prizes!

Meal choices are listed below. Please go to the PAC website and choose your dinner choice (& one for your significant other) & pay online via the PAC PayPal...OR mail a check (made out to "Prescott Astronomy Club") with your dinner choices to:

Prescott Astronomy Club
186 E. Sheldon St. #1122
Prescott, AZ 86301

Be sure to choose an entree & pay prior to November 22nd. The list will be turned into the hotel for purchase (so they have time to make sure they have all goods on hand). Parking is free across the street from the hotel (parking lot) or on the street. The courthouse square will be decorated for the holidays & very festive.

We had FUN last year and hope this one is, too. It is the last event of 2023, so join us to celebrate!

Holiday Party Choices

EVERYONE GETS:

**Harvest Baguette with butter

**Winter Salad with baby spinach, dried cranberries, walnuts, gorgonzola cheese, & apple cider vinaigrette

**Coffee/tea/water

**Dessert: Coconut Cream Pie (sugar free) OR Bread Pudding with Whisky Sauce (served to people equally, so trade with someone to get which one you want)

ENTREE CHOICES:

— Slow Roasted Prime Rib with red potatoes, & seasonal vegetables

— Chili Lime Salmon with tricolor couscous & seasonal vegetables

— Blackened Shrimp with Orzo & seasonal vegetables

— Asian Sticky Chicken with rice & seasonal vegetables (new choice!)

Please note that the hotel reserves the right to substitute an entree or vegetable if difficult to supply. But so far, this has never happened.

It's Time to Renew Your Club Membership for 2024

As 2023 draws to a close, it's now time to renew your Prescott Astronomy Club membership for 2024. We have another exciting year planned, & all current members are encouraged to renew before the end of December. Individual club membership is still only \$25 for the year, & a family membership is still only \$35 for the year. New members are also invited to join. Membership is open to anyone with an interest in astronomy, & you do not need to own a telescope to become a member.

You can easily renew by going online and following these steps:

- Go to <https://prescottastronomyclub.org/membership/>
- Under the "Payments" section, use the "Type" drop-down box to select either an Individual or Family membership.
- Use the "Duration" drop-down box to select "JAN-DEC ANNUAL/RENEWALS".
- Click on the "Select" button.
- Click on the "Add to Cart" button.
- A box containing the items in your cart should appear. Click on "Checkout with PayPal". You should then be redirected to a PayPal log-in. You can pay with PayPal or use the "Pay with Debit or Credit Card" button to pay by credit card.
- If your contact information has changed, complete the "Tell Us About You" section and click on "Email Enrollment".

If you don't like using online payment systems, you can instead send us a check using the form attached to the end of this newsletter. Don't delay and renew today! We look forward to seeing you at our 2024 club meetings, star parties, outreach events, and social activities.

Nominees for Officers and Directors-at-Large 2024

President- Art Arnold-Roksandich — Member since 2019. He has served as Treasurer and as the President for the last 2 years. He is running for a third term.

Vice President- Brian Blau — Member since 2021. He is running for a third term as Vice President.

Treasurer- Roland Albers — Member since 2021. He has served as Secretary and as Treasurer for the past year. He is running for a second term as treasurer.

Secretary- Jack Evans — Member since 2022. He is running for a second term as Secretary.

Directors-at-Large serve two year terms.

Lisa Anderson is running to replace EJ Van Horne. EJ will stay on as a webmaster. Lisa has a lot of previous club management experience. She currently has responsibility for arranging speakers and will pick up the field trip for 2024. Member since 2023.

Ken Olson is running for another 2 year term. He oversees Astro League coordination. Member since 2021.

Susanne Vaughn will serve the second year of her term. She plans events. Member since 2021.

Doug Tilley will serve the second year of his term. He is in charge of the picnic and as advisor. Member since 2014.

Need More kNights in Shining Armor

Wow! The Prescott Astronomy Club has come a long way in the last couple of years.

- Membership has grown from 43 memberships to over 80 (100 if you count family members).
- The speaker program has grown in popularity and our meeting attendance is larger than ever.
- New webmaster and new website
- New Editor updated the look of our newsletter.
- Our Starry nights and Outreach programs have increased, and public awareness has grown.
- METASIG has been restarted.

This is due to the hard work of the club's board and volunteers. I want to thank all of you for your enthusiasm and generosity.

Before the pandemic, membership and volunteer participation were declining which left the club ill-prepared to deal with the challenges of such a blow. In the meantime, our webmaster and newsletter editor retired after years of service. We have been able to fill the board again, replace our respected predecessors, grow our volunteer pool, and overcome the challenges we faced over the last two years.

Moving forward, we need more volunteers. Right now, we have 8 board members and 5 other volunteers that bear much of the load. There are another 5 or 6 people who regularly volunteer their time, telescopes, binoculars, and knowledge of the sky for Starry Nights and Outreach. To continue and grow our mission, the club needs more members to help. **Come and help with the Prescott Astronomy Club and spread the love of our hobby!**

LIST OF CURRENT NEEDS. Contact info is included or you can talk to the person or board member at the meeting.

Leadership Team	Volunteers to fill the positions of President and possibly a board member. Nominations are due by the October meeting and the election in November. Contact Doug Tilley dought51@gmail.com
Second Webmaster	Help with updates and support of website based on WordPress. Contact Brian Blau vp@prescottastronomyclub.org
Telescope Volunteers for Starry Nights and Outreach Star Parties	Expand our pool of telescope volunteers and guides, members who will answer questions and who people around the sky. Big events coming in October - Highland Center, Talking Rock, and Partial Solar Eclipse. Contact Brian Blau. vp@prescottastronomyclub.org
Picnic	Help with setup and clean up. Show up early or stay late.
Christmas Party	Assist with party favors, name cards, door prizes. Contact Susanne Vaughn susanne.vaughan@gmail.com
Refreshments	Help and backup snack table. Contact Jill Albers.

New Programs - programs waiting on volunteers to get started.

School Outreach	Contact and plan astronomical topics/activities with schoolteachers. Contact Art Arnold-Roksandich p@prescottastronomyclub.org
Outreach Coordinator	Private requests especially for young people camps, celestial events, such as eclipses, comets, etc. for public viewing. Contact Art p@prescottastronomyclub.org or Brian vp@prescottastronomyclub.org
Dark Site Committee	New committee for locating and listing dark sites near Prescott for members, possibly locating a permanent site for the club. Dark Sky Promotion - increase public awareness for preserving dark skies. Contact Brian vp@prescottastronomyclub.org

Publicity and Social Media	Notify local media of upcoming events. Establish a social media presence. Contact Art p@prescottastronomyclub.org
Club Merchandise	Design and select vendor to put our logo on mugs, water-bottles, t-shirts, caps, etc. Contact Art p@prescottastronomyclub.org
Videographer/Zoom	Video speakers and handle zoom as needed. Contact Art p@prescottastronomyclub.org



Original Photo: unknown

Spy the Seventh Planet, Uranus

By Liz Kruesi

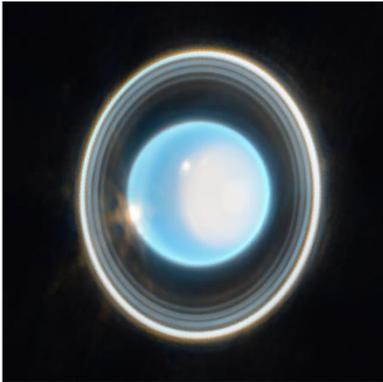


Image Credit: [NASA, ESA, CSA, STScI; Image Processing: Joseph DePasquale (STScI)]

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

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

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

Since that discovery, multiple observatories have revealed more details of Uranus and its ring system. Most recently, the NASA-led JWST space observatory captured the planet and its rings in detail. This recent image combines just 12 minutes of exposure in two filters to reveal 11 of the planet's 13 rings. Even some of the planet's atmospheric features are visible in this image. Even with advanced imaging like that from JWST, much of Uranus remains a mystery, including why it orbits the Sun on its side. This is because only one spacecraft has ever visited this planet: NASA's Voyager 2, which flew by the distant planet in the mid-1980s.²

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

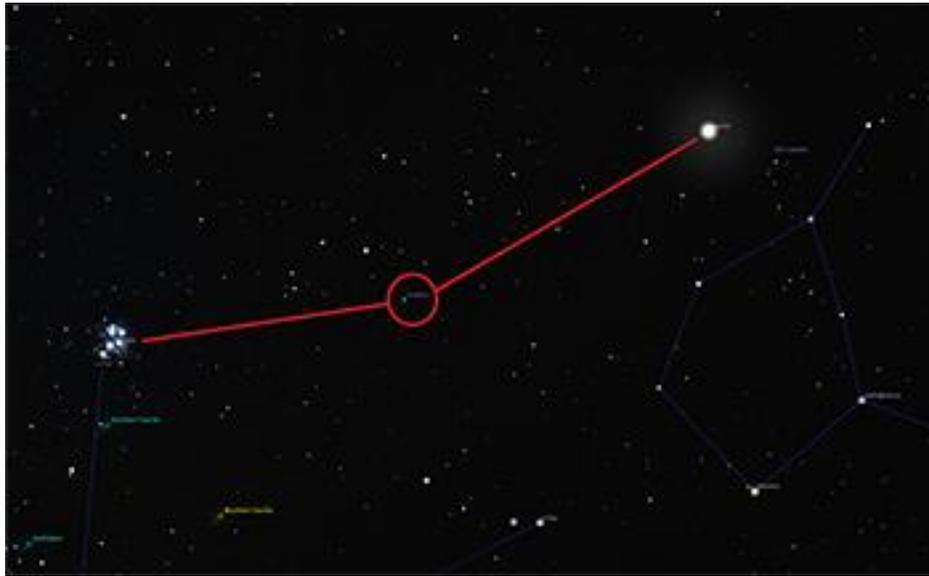


Image Credit: Sky map picturing M45, Uranus and Jupiter, Stellarium

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



Image Credit: Sky map picturing M45 and Uranus, Stellarium

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

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

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

Backyard Astronomer



Original Photo: Eberhard Grossgasteiger

The Backyard Astronomer - November 2023

Astrophotography and JUMBO Planets in Orion

By Adam England, The Backyard Astronomer

On Wednesday 1 November, the stars of the Orion Constellation will begin to rise almost directly East around 10PM MST. Rising slightly earlier each consecutive night, The Hunter has long been one of the most important asterisms in the night sky, used for both tracking the seasons and for navigation by many cultures. The three stars of the Belt often define various interpretations of what our ancestors saw. For example, Chinese astrology refers to the lunar mansions *Shen* meaning “three”, and Bugis sailors from Indonesia use *Tanra Tellué* or the “sign of three” for sailing. The Scandinavian goddess Frigg was envisioned holding a distaff, and the Finns viewed the three stars as the scythe of Väinämöinen. The Lakota people of North America see these same three stars as the spine of a bison, and the surrounding stars filling out the body, with the nearby Pleiades as the bison’s head.

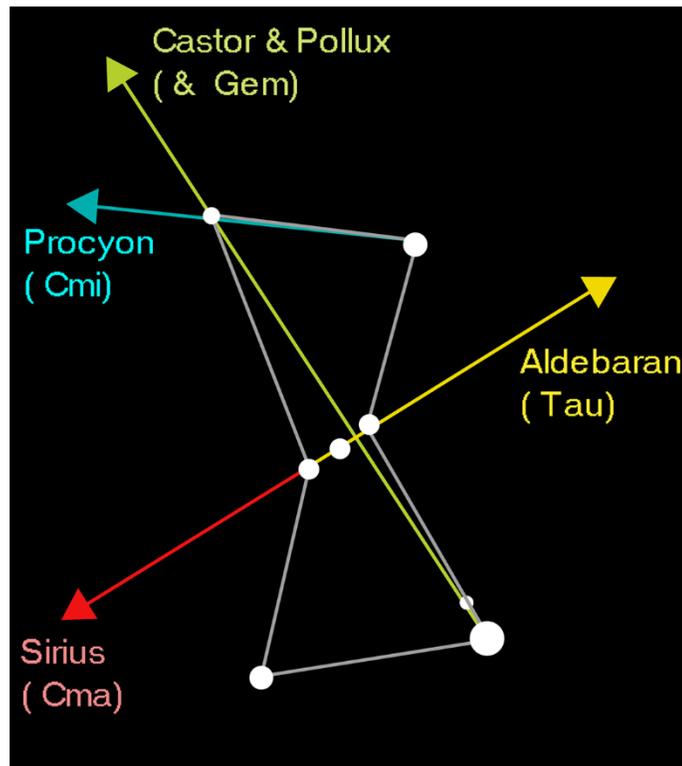


Image Credit: Orion Navigation guide, courtesy Wikimedia Commons.

Hanging below the belt are three more stars, often depicted as the sword or scabbard of the Hunter. The center of these is more than just a star and is one of the few non-stellar objects we can see with the naked eye. At an apparent magnitude of 4.0, the Orion Nebula is the closest star forming region to Earth. In the late 19th century, doctor and amateur astronomy Henry Draper pioneered astrophotography, first photographing the moon in 1840, the transit of Venus in 1874, and choosing the Orion Nebula as his first deep sky target in 1880.



Image Credit: Orion, James Webb Space Telescope.

One "giant leap for mankind" was the successful launch of the James Webb Space Telescope in December 2021, which has continued this work of imaging the cosmos. Recently turning its attention to the Orion Nebula, the sensitive infrared instruments on the James Webb, combined with data from Hubble and ground based observatories, revealed something we have never seen nor predicted in space — JuMBO planets. JuMBOs (an acronym for Jupiter Mass Binary Objects) are large planets that seem to have formed separately from the standard model of solar systems, and 40 distinct pairs were observed across this 24 light year wide stretch of space. As big as Jupiter or even larger, they were not quite massive enough to ignite fusion and become stars, but they found mates in the darkness of space and these rogue planets now orbit each other.



Image Credit: Orion, from Adam England's iPhone!

Your backyard scope may not be able to resolve distant JuMBOs, but you can certainly use it to take a cell phone image of the Orion Nebula. Using an adapter or even just placing your camera against your eyepiece, you can capture the beauty of the Orion Nebula from your own backyard.

Adam England is the owner of Manzanita Insurance and Accounting and moonlights as an amateur astronomer, writer, and interplanetary conquest consultant. Follow him @ [Facebook.com/BackyardAstronomerAZ](https://www.facebook.com/BackyardAstronomerAZ) and [Instagram.com/TheBackyardAstronomerAZ](https://www.instagram.com/TheBackyardAstronomerAZ).



Original Photo: George Desipris

November Meteor Showers

By Jack Evans

Mid-October to mid-December is an almost continuous period of significant meteor activity. The best time to observe most meteor showers is the hour before twilight. Two major meteor showers visit us in November: The Leonids and the Geminids.

Leonids

The Leonids comprise the remnants of comet 55P/Tempel-Tuttle and are historically famous for producing meteor storms in the years 1833, 1866, 1966, 1999, and 2001 when their parent comet was at perihelion. The Leonids are known to be very unpredictable. Hourly rates have been declining in recent years and are not expected to improve in the near future. The most productive times for the Leonids occur when the earth encounters dense clouds of cometary debris from earlier passings. Unfortunately, our next encounter with dense debris won't occur till 2099.

Nevertheless, the Leonids are very swift, often very bright, with a high percentage of glowing, persistent trains. The radiant is in the Sickle asterism of the constellation Leo which rises around midnight and is visible through dawn.



Active Dates:	November 6-30
Peak Night:	November 17-18, 2023.
Moon:	23% Full. Waxing Crescent. Sets before 10 p.m.
Maximum rate at peak:	10 meteors per hour

Geminids

The Geminids are usually the strongest and most dependable meteor shower of the year. The parent source of the Geminids is the object 3200 Phaethon — a Palladian asteroid. Hence, the Geminids, along with the Quadrantids, are the only major meteor showers not originating from a comet. This is the one major shower that provides good activity prior to midnight as the constellation of Gemini is well placed from 8:00 p.m. onward. The radiant is located in Gemini near Castor and is almost 30 degrees high in the east-northeast by 9:00 p.m. local time. This year's shower peaks on an almost moonless night on November 17th. The Geminids are often bright and intensely colored. However, because of their medium-slow velocity, persistent trains are not usually seen.



Active Dates:	November 19-December 24
Peak Night:	December 13-14, 2023.
Moon:	1% Full. Sets 5:57 p.m.
Maximum rate at peak:	>100 meteors per hour

Don't miss these two events!

Photos from the PAC

Original Photo: Zukiman Mohamad

Lowell Observatory Field Trip

Oct 6, 2023

PAC members visited Lowell Observatory in Flagstaff as a group for the first out-of-town meetup in many years. Everyone enjoyed the campus tours given by a staff astronomer as well as a tour of the new building under construction. The group attended a private early evening observing session using the 24" Dyer telescope and afterward spent the remainder of the evening on the open deck observatory.



Photo Credit: Brian Blau

Partial Solar Eclipse Viewing Oct 14, 2023

PAC held a partial solar eclipse viewing event located at the Scenic Overlook on Pioneer Parkway in Prescott. Approximately 60 people attended and were very excited to see the eclipse even though the moon only covered 83% of the sun at its maximum.



Photo Credit: Brian Blau

Talking Rock Member-Only Star Party Oct 17, 2023

PAC held a member-only event at the Talking Rock community's dark location near the putting greens. Approximately 80 in attendance including many Talking Rock residents. Starting off Manuel Lucero, the Dir. of the Museum of Indigenous People, shared Native People's astronomy stories and history. Afterward club members had their telescope available for viewing.



Photo Credit: Brian Blau

Calendar of Events

Original Photo: Camille Cox

November 2023:

This calendar is from In-the-Sky.org & shows the objects & events visible during November 2023.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			¹ Lunar Occultation of Beta Tauri Jupiter at Perigee PAC Meeting	²	³ Jupiter at Opposition	⁴ Saturn Ends Retrograde Motion

5 Last Quarter Moon Asteroid 18 Melpomene at Opposition	6 Mercury at Aphelion	7	8	9 Conjunction of Moon & Venus Close Approach of Moon & Venus Lunar Occultation of Venus	10 Comet C/2023 H2 (Lemmon) Passes Perigee Comet C/2023 H2 (Lemmon) Reaches Peak Brightness	11
12 Northern Taurid Meteor Shower 2023	13 New Moon Uranus at Opposition	14 Conjunction of Moon & Mercury Moon at Perihelion	15	16	17	18 Mars at Solar Conjunction Leonid Meteor Shower 2023 Pleiades Cluster is Well-Placed
19	20 First Quarter Moon Conjunction of Moon & Saturn Close Approach of Moon & Saturn	21 1 Ceres at Solar Conjunction Moon at Perigee	22 α -Monocerotid Meteor Shower 2023	23	24	25 Conjunction of Moon & Jupiter Close Approach of Moon & Jupiter Moon at Aphelion
26 Close Approach of Moon & M45	27 Full X Moon	28 Venus at Perihelion Lunar Occultation of Beta Tauri November Orionid Meteor Shower 2023 Hyades Cluster is Well-Placed	29	30		

Call for Images & Ideas

Original Photo: Egil Sjøholt

We'd Love Your Photos & Ideas for the Newsletter!

I am requesting any & all photographer members of PAC to submit astronomical &/or sky photographs to share with all the members by their inclusion in Ephemeris. Images can be sent to Hilary Legacy at ed@prescottastronomyclub.org. Please include descriptions of equipment, cameras, image capture parameters & processing, as well as what's in the image, & when & where you took it. Or, for anyone who likes to photo edit or make their own images, I'd love to hear from you too. Thanks!

I'm also asking for anyone with ideas of things we could put in our newsletter to contact me. If there's something you'd like to see here, then tell me about it. Email Hilary Legacy at ed@prescottastronomyclub.org.



Observing Lists

Observing lists are available in PDF format on the PAC website to provide guidance & goals for visual & astrophotography programs. These lists graciously provided by Past President David Viscio to assist in planning your observation activities. The lists are in PDF format and may be viewed, downloaded or printed with the permission of David Viscio.

Astroleague Lunar 100
Bright Nebulae Dunlop 100.
Globular Clusters
Messier
Planet Maps

Binocular Showpieces Caldwell
Face-On Spiral Galaxies
Herschel II
Herschel 400

Royal Astronomical Society of Canada Finest NGC Saguaro Astronomy Club Best NGC S&T

SCAVENGER HUNTS IN THE SKY Lists for Any Occasion

Need ideas for your visual or astrophotography program? We have you covered with observing lists for your personal exploration or use at a star party.

Click on the links below to open an observation list in another window to view or print it.

[Astroleague Lunar 100](#)

[Astroleague Urban](#)

[Binocular Showpieces](#)

[Bright Nebulae](#)

[Caldwell Objects](#)

[Double Stars](#)

[Dunlop 100 \(Southern Hemisphere\)](#)

[Face-On Spiral Galaxies](#)

[Globular Clusters](#)

[Herschel 400](#)

[Herschel II](#)

[Hidden Treasures](#)

[Messier Objects](#)

[Open Clusters](#)

[Planet Maps](#)

[Planetary Nebulae](#)

[RAS of Canada Finest NGC](#)

[Saguaro Astronomy Club Best NGC](#)

[Secret Deep](#)

[Space & Telescope Lunar 100](#)

[Telescope Showpieces by Month](#)



PAC Board of Directors:

President: Art Arnold-Roksandich
Vice-President: Brian Blau
Secretary: Jack Evans
Treasurer: Roland Albers

PAC Directors-at-Large:

Ken Olson
Doug Tilley
Susanne Vaughan
EJ Van Horne

PAC Coordinators:

Astronomical League Coordinator: Ken Olson
Christmas Party: Susanne Vaughan
Equipment Loans: Roland Albers
Membership: Roland Albers
METASIC: John Dwan

Newsletter: Hilary Legacy
Night Sky Network: Open
Outreach Coordinator: Brian Blau
Refreshments: Jill Albers
Speakers: Lisa Anderson
Starry Nights Coordinator: Brian Blau
Summer Picnic: Doug Tilley
Webmaster: EJ Van Horne

PAC Contact Information:

Website: <https://www.prescottastronomyclub.org>
Email: pacinfo@prescottastronomyclub.org

PAC Mentors:

If you need advice on the purchase of astronomy equipment, setting up equipment, astrophotography, etc., contact a PAC mentor.

Astrophotography: Brian Blau
General & Astrophotography: David Viscio
Visual Observation: Greg Lutes



Ask a Member!

A 15-minute segment is being added to the regular general meetings where members can have their burning questions answered by other knowledgeable members. If you have an astronomy-related question you would like answered, submit it to Art Arnold-Roksandich at p@prescottastronomyclub.org. You can also bring up the question at the meeting.

Prescott Astronomy Club Membership Form

New Member

Renewing Member

Change of Info

Please print legibly!

(DO NOT LEAVE DATES AND NAMES BLANK)

Name: _____

Today's Date: _____

(If renewing and there is a change in contact information, enter info only in fields with a change.)

Mailing Address:

City: _____ State: _____ Zip: _____

Home Phone: (____) ____-____

Day Phone: (____) ____-____-

E-Mail: _____

Additional Family Members: _____

Name As to appear on Badge: _____ Caption: _____

Name As to appear on Badge: _____ Caption: _____

Name As to appear on Badge: _____ Caption: _____

Name As to appear on Badge: _____ Caption: _____

(Caption is a nick name or Club position and is optional)

(CIRCLE ONE)

MEMBERSHIPTYPE:	SINGLE	FAMILY	JUNIOR
Jan - Dec (new and renewals)	\$25.00	\$35.00	\$15.00
Apr - Dec (new members only)	\$18.75	\$26.25	\$11.25
Jul - Dec (new members only)	\$12.50	\$17.50	\$7.50
Oct - Dec (new members only)	\$25.00	\$35.00	\$15.00 (Full year price for 15 months)

PAC Newsletter will be available online and by e-mail.

Do you wish to receive your Reflector magazine by: Mail or E-mail (Please check one or both) Neither.

Do you want to OPT-IN for advertising and notices from the Astronomical League? Yes No (Please check one)

For new applications or renewals, make a check payable to: Prescott Astronomy Club

Send to: Prescott Astronomy Club, 186 E. Sheldon St. #1122, Prescott, AZ 86301

E-mail questions to: t@prescottastronomyclub.org

Prescott Astronomy Club Membership Form

Name: _____

Today's Date: _____

Please tell us something about yourself and your interest in astronomy. This will assist us in planning programs and activities which you will find the most beneficial.

1. How would you classify yourself as an amateur astronomer? Beginner Intermediate Advanced
2. Do you own a telescope? Yes No Type/Size _____
3. Are you looking for assistance in choosing a telescope? Yes No
4. Would you like assistance working with a telescope or astrophotography? Yes No
5. Which aspects of the Astronomy Club and astronomy are you most interested in: (*Check as many as you wish*)
 - Social
 - Observing
 - Computing
 - Access to professional quality equipment
 - Sidewalk Astronomy
 - Meetings
 - Astrophotography/imaging
 - Speaker program
 - Amateur Telescope Making (ATM)
 - Other (specify)

6. Do you have any special skills/job/occupation that might benefit the club? _____

7. Would you volunteer for committee work assisting or leading one or more of the following?

- | | |
|--|---|
| <input type="checkbox"/> Board of Directors | <input type="checkbox"/> Brochure planning |
| <input type="checkbox"/> Trip planning | <input type="checkbox"/> Facebook Administrator |
| <input type="checkbox"/> Astronomical League Coordinator | <input type="checkbox"/> Greeter |
| <input type="checkbox"/> Highlands Center Coordinator | <input type="checkbox"/> Hospitality (refreshments) |
| <input type="checkbox"/> META SIG* | <input type="checkbox"/> Newsletter |
| <input type="checkbox"/> Night Sky Network | <input type="checkbox"/> PAC Store Sales |
| <input type="checkbox"/> Publicity Coordinator | <input type="checkbox"/> School and Camp Outreach |
| <input type="checkbox"/> Starry Nights Coordinator | <input type="checkbox"/> Website Administrator |

*META SIG (Meet, Eat, and Talk Astronomy Special Interest Group) is a monthly social event at a local restaurant

PAC also has a Special Interest Group for Astrophotography.