



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

FEBRUARY 2022

UPCOMING EVENTS



Wednesday, February 2 - Regular PAC meeting @ 6:30 PM. The meeting will be conducted virtually on Zoom hosted by Art Arnold-Roksandich. Invitations will be sent to all members. Guests can register on our webpage. To participate in the meeting, one must register by e-mail.

James D. Windsor, graduate research assistant, Department of Astronomy and Planetary Science, Northern Arizona University, will present *"Clouds on Earth, Our Solar System, and Beyond"*. Microphysical and dynamic processes occurring within clouds significantly influence numerous large-scale dynamic, energetic, and chemical processes occurring within the atmospheres of nearly all Solar System planets. It is expected that these same atmospheric processes heavily influence the radiative energy balance of exoplanets. This talk will review what we know about clouds on our own planet, then expand to what we know about clouds in our solar system and beyond. Ultimately the talk will converge to the cutting edge of exoplanet atmospheres and the unique problems that clouds in their atmospheres introduce.

Thursday, February 17 - Third Thursday Presentation @ 5:30 PM in the Founder's Suite, Prescott Public Library. Curtis Dankof, Public Service Supervisor, Lowell Observatory, will present *"Lowell Observatory: An Iconic Research and Education Destination"*. Since its founding in 1894, Lowell Observatory has been at the forefront of astronomical discovery and education. As the world's largest private research observatory, Lowell is committed to doing high end research in Flagstaff and around the world. At the Mars Hill Campus in Flagstaff, our over 100,000 annual visitors are able to learn, and immerse themselves in the wonders of the cosmos.

IT'S TIME TO RENEW YOUR PAC MEMBERSHIP!

A new year has begun and we have high expectations for the Prescott Astronomy Club in 2022. Please help us by renewing your PAC membership soon. Dues have not changed - they are still \$25 for individuals and \$35 for a family - and are due by January 1st. Memberships expired on January 1st and non-renewed members will be dropped from the club's roster on February 1st.

You can renew by going to prescottastronomyclub.org and clicking on the Join button. You then have the option of paying your dues online using Paypal or a credit card. Alternatively, you can print out a membership form and mail it with a check to the club treasurer at the listed address. If your contact information has not changed in the last year, simply write ‘no changes’ on the membership form before mailing it to the treasurer.

HANGING OUT WITH THE TWINS OF GEMINI

David Prosper

The night skies of February are filled with beautiful star patterns, and so this month we take a closer look at another famous constellation, now rising high in the east after sunset: Gemini, the Twins!



If you're observing Orion, as discussed in last month's article, then Gemini is easy to find: just look above Orion's "head" to find Gemini's "feet." Or, make a line from brilliant blue-white Rigel in the foot of Orion, through its distinct "Belt," and then on through orange Betelgeuse. Keep going and you will end up in between the bright stars Castor and Pollux, the "heads" of the Gemini Twins. While not actually related – these stars aren't bound to each other, and are almost a magnitude apart in brightness – they do pair up nicely when compared to their surrounding stars. Take note: more than one stargazer has confused Gemini with its next-door neighbor constellation, Auriga. The stars of Auriga rise before Gemini's, and its brightest star, Capella, doesn't pair up as strikingly with its second most brilliant star as Castor and Pollux do. Star-hop to Gemini from Orion using the trick above if you aren't sure which constellation you're looking at.

Pollux is the brighter of Gemini's two "head" stars - imagine it has the head of the "left twin" - and located about 34 light-years away from our Solar System. Pollux even possesses a planet, Pollux b, over twice the mass of Jupiter. Castor - the head of the "right twin" - by contrast, lies about 51 light-years distant and is slightly dimmer. While no planets have been detected, there is still plenty of company as Castor is actually a six-star system! There are several great deep-sky objects to observe as well. You may be able to spot one with your unaided eyes, if you have dark skies and sharp eyes: M35, a large open cluster near the "right foot" of Gemini, about 3,870 light-years away. It's almost the size of a full Moon in our skies! Optical aid like binoculars or a telescope reveals the cluster's brilliant member stars. Once you spot M35, look around to see if you can spot another open cluster, NGC 2158, much smaller and more distant than M35 at 9,000 light-years away. Another notable object is NGC 2392, a planetary nebula created from the remains of a dying star, located about 6,500 light-years distant. You'll want to use a telescope to find this intriguing faint fuzzy, located near the "left hip" star Wasat.

Gemini's stars are referenced quite often in cultures around the world, and even in the history of space exploration. NASA's famed Gemini program took its name from these stars, as do the appropriately named twin Gemini North and South Observatories in Hawaii and Chile. You can discover more about Gemini's namesakes along with the latest observations of its stars and related celestial objects at nasa.gov.



Castor and Pollux are Gemini's most prominent stars, and often referred to as the "heads" of the eponymous twins from Greek myth. In Chinese astronomy, these stars make up two separate patterns: the Vermillion Bird of the South and the White Tiger of the North. What do you see? The Night Sky Network's "Legends in the Sky" activity includes downloadable "Create Your Own Constellation" handouts so you can draw your own star stories: bit.ly/legendsinthesky Image created with assistance from Stellarium.



Montage of Gemini North, located on Mauna Kea in Hawaii, and Gemini South, located on Cerro Pachón in Chile. These “twin” telescopes work together as the Gemini Observatory to observe the entire sky. Image Credit: NOIRLab Source: <https://www.gemini.edu/gallery/media/gemini-northsouth-montage>

NEW MEMBER LOOKING FOR OBSERVING PARTNERS

Fred Oswald (new PAC member) is looking for companions for informal observing at local dark-sky sites, such as Contreras Rd. near Iron Springs or Woodchute/Mingus Mtn. It is safer to go to these isolated spots with a group. If interested, contact Fred at fredoswald@gmail.com or phone/text 928-899-9197.

WHAT'S HAPPENING IN FEBRUARY 2022

This calendar from In-The-Sky.org shows the objects and events visible during February 2022.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2 19P/Borrelly at perihelion Conjunction of the Moon and Jupiter	3	4 Saturn at solar conjunction	5 Close approach of Mars and M22 Asteroid 20 Massalia at opposition
6	7 Close approach of the Moon and Uranus Lunar occultation of Uranus	8 α -Centaurid meteor shower 2022 Moon at First Quarter NGC 2808 is well placed	9 Venus at greatest brightness Mercury at highest altitude in morning sky	10 The Moon at apogee	11 Mercury at dichotomy	12 Conjunction of Mercury and Pluto Venus at highest altitude in morning sky Conjunction of Venus and Mars
13	14	15	16 Full Moon Mercury at greatest elongation west	17	18 The Moon at aphelion	19 M81 is well placed
20	21 NGC 3114 is well placed	22	23 Moon at Last Quarter	24	25	26 The Moon at perigee Conjunction of the Moon and Venus
27 Conjunction of the Moon and Mars Close approach of the Moon and Mars IC2581 is well placed	28 Conjunction of the Moon and Mercury The Moon at perihelion Mercury at aphelion Conjunction of the Moon and Saturn					

For additional information and details, see: <https://in-the-sky.org/newscal.php> and www.telescopius.com . Observing lists of monthly ‘Binocular’ and ‘Telescope’ Showpieces can be found on the club website.

ALCON 2022

The 2022 Astronomical League Convention (ALCON 2022) will be held in Albuquerque, New Mexico on 28 to 30, July 2022. If you would like to attend the convention, please contact Jim Fordice at President@taas.org. If you have a question about ALCON 2022, send an email to 2022alcon_info@taas.org. Additional information can be found in newsletter appendix.

CALL FOR ASTRO-IMAGES

David Viscio, editor

I request all astrophotographer members of the club submit examples of their astro-images to share with club members by inclusion in the Ephemeris. Images can be sent to me at pkmist@gmail.com. Please include description of equipment, cameras, image capture parameters and processing.

NEED TO KNOW - 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 explained, submit the question to Art Arnold-Roksandich p@prescottastronomyclub.org. You can also bring up the question at the meeting.

FOR SALE

Please visit the Classified Ads section of the club website to view the items posted there for sale:

<http://prescottastronomyclub.org/classified-ads/>

New items are added now and then, so don’t miss out on something that you would like to get for yourself...or a friend.



PAC MENTORS

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



Open - Astrophotography

David Viscio - General & Astrophotography - (928) 775-2918

Greg Lutes - Visual Observing - (928) 445-4430

Joel Cohen - Beginner's Astronomy: Selecting & Using a Telescope - (856) 889-6496

OBSERVING LISTS

Observing lists are available in PDF format on the PAC website to provide guidance and goals for visual and astrophotography programs.



Astroleague Lunar 100

Bright Nebulae

Dunlop 100

Globular Clusters

Herschel II

Messier

Planet Maps

Royal Astronomical Society of Canada Finest NGC

Saguaro Astronomy Club Best NGC

Telescope Showpieces

Binocular Showpieces

Caldwell

Face-On Spiral Galaxies

Herschel 400

Hidden Treasures

Open Clusters

Planetary Nebulae

S&T Lunar 100

The Secret Deep

PAC WEBSITE & YAHOO GROUPS

Website: <http://www.prescottastronomyclub.org>

E-mail: pacinfo@prescottastronomyclub.org



BOARD OF DIRECTORS

President: Art Arnold-Roksandich

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At Large: EJ Van Horne

At Large: Dave Covey

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PAC COORDINATORS

Astronomical League Coordinator: John Carter

Facebook: Open

Membership: Susanne Vaughan

METASIG: Open

Newsletter: David Viscio

Night Sky Network: Open

PAC Affiliate Partner w/ NAU Space Grant Program – Cory Shaw

PAC Store Sales - Open

Property Records: Open

Public Relations: Open

Refreshments: Open

Schools & Camps Outreach: Joel Cohen

Starry Nights Coordinator: David Viscio

Third Thursday Coordinator: Dave Covey

Webmaster: EJ Van Horne



COMET NEOWISE

Image Credit: Chris Holmes



Canon EOS 6D Mark II, ISO 800, Canon EF 75-300mm at 75mm, f/4, 4.7 sec



ALCON 2022

July 28 – 30

EMBASSY SUITES HOTEL

1000 Woodward Pl. NE

Albuquerque, New Mexico 87102

<https://alcon2022.astroleague.org/>

(Website available by January 14, 2022)



Hosted by:

The Albuquerque Astronomical Society

www.TAAS.org