



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

April 2022

UPCOMING EVENTS



Thursday, March 31 - Starry Nights Public Star Party @ 7:00 PM at the Highlands Center for Natural History, Prescott. 100+ people have pre-registered to attend this event. Volunteers are needed to bring telescopes for public viewing. Please notify Brian Blau, legba42@gmail.com, if you intend to participate.

Wednesday, April 6 - Regular PAC meeting @ 6:30 PM at Prescott Public Library Founder's Suite hosted by Art Arnold-Roksandich. This will be a hybrid meeting with both in-person and Zoom. Registration is not necessary. The URL link for Zoom is on the new website and included in the email reminder sent to the membership.

Randall C. Iloff, club member, seasoned program manager, expert systems engineer and founder of Eclectic Intellect, LLC, will present "*The Invisible Matters - How Program Management and Systems Engineering Teamed to Build the World's Largest IceCube*" What can astronomers learn from an IceCube? In this case, a lot! This is an insider's story of how a small team of scientists, engineering and project management were able to bring IceCube into existence on time, on budget, and comfortably in excess of technical requirements. This fun and engaging presentation shares many of the actual working documents and photos of key steps during the development process, along with a few stories you'll probably hear nowhere else!

Thursday, April 21 - Third Thursday Presentation @ 5:30 PM in the Founder's Suite, Prescott Public Library. Dr. Rizk Bashar, University of Arizona Lunar and Planetary Laboratory, will present "*Notes from the Exploration of the Solar System*". More than ever, unknown unknowns, lessons learned, acceptable risk and doing more with less still govern the planning and operation of space missions in the age of JWST and Space-X. All the same precepts and hard-won lessons hold, but apparently, we've all just gotten better at it. In a presentation suitable for a general audience, Rizk will present his own results and observations from missions in which he has participated—including Cassini, OSIRIS-REx and Mars Sample Return—that demonstrate the point.

EDITOR FOR PAC NEWSLETTER (EPHEMERIS) NEEDED

David Viscio, Editor

It has been a pleasure serving PAC as newsletter editor. But after almost 13 years as the editor, I have decided it is time to pass this responsibility on to someone else. Soon after I joined the club in September 2009, I volunteered to be editor as a way to contribute to the club's mission. I encourage a newer, younger member to take on this task as a means to contribute to the club. Preparing the newsletter takes only a few hours at the end of each month in the comfort of your own home. I will gladly sit with the new editor and show them all my information sources and 'tricks' for preparing the newsletter. If you are interested in volunteering, contact the president, Art Arnold-Roksandich (p@prescottastronomyclub.org) and me (pkmist@gmail.com). Thank you

METASIG COORDINATOR NEEDED

Art Arnold-Roksandich, PAC President

METASIG has been an important social part of the Prescott Astronomy Club for many years. It stands for "Meet, Eat, and Talk Astronomy Special Interest Group" and is open to anybody. It is a chance for club members to meet socially and get to know each other. Unfortunately, we had to suspend it during Covid. Several members are requesting us to start up METASIG again, and the board feels that it is time. We need someone to help coordinate with local restaurants hosting the METASIG meeting once a month as well as obtain counts of participants. Usually, 20-30 people attend. If you are interested or like more information please contact me, the president at p@prescottastronomyclub.org or any officer/director of the club.

SPRINGTIME CATSPOTTING: LYNX AND LEO MINOR

David Prosper

Many constellations are bright, big, and fairly easy to spot. Others can be surprisingly small and faint, but with practice even these challenging star patterns become easier to discern. A couple of fun fainter constellations can be found in between the brighter stars of Ursa Major, Leo, and Gemini: Lynx and Leo Minor, two wild cats hunting among the menagerie of animal-themed northern star patterns!



Lynx, named for the species of wild cat, is seen as a faint zigzag pattern found between Ursa Major, Gemini, and Auriga. Grab a telescope and try to spot the remote starry orb of globular cluster NGC 2419. As it is so distant compared to other globular clusters - 300,000 light years

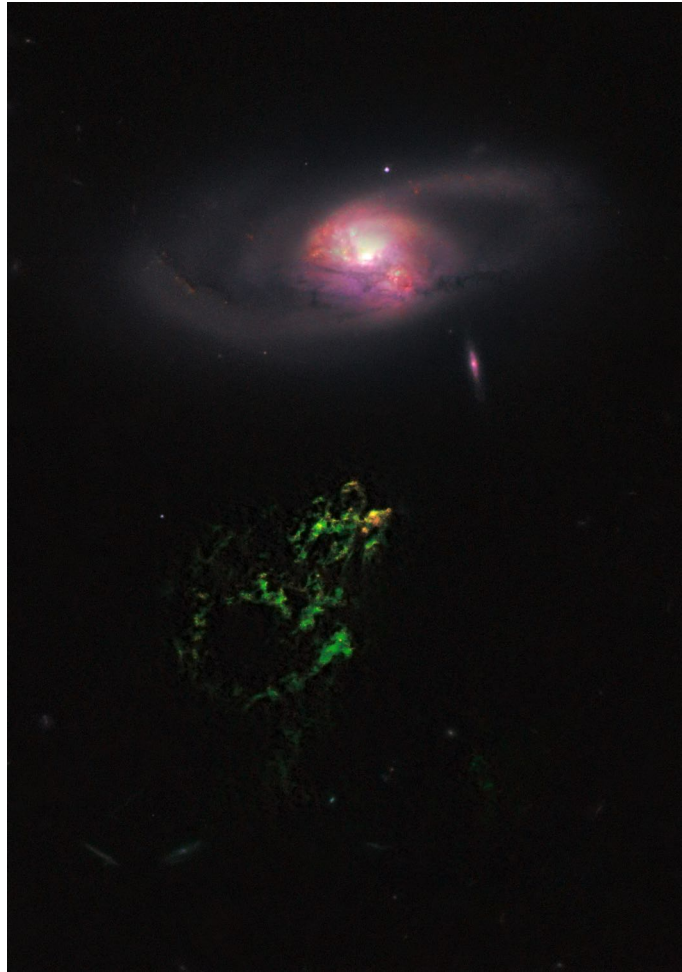
from both our solar system and the center of the Milky Way - it was thought that this cluster may be the remnants of a dwarf galaxy consumed by our own. Additional studies have muddied the waters concerning its possible origins, revealing two distinct populations of stars residing in NGC 2419, which is unusual for normally-homogenous globular clusters and marks it as a fascinating object for further research.

Leo Minor is a faint and diminutive set of stars. Its “triangle” is most noticeable, tucked in between Leo and Ursa Major. Leo Minor is the cub of Leo the Lion, similar to Ursa Minor being the cub to the Great Bear of Ursa Major. While home to some interesting galaxies that can be observed from large amateur scopes under dark skies, perhaps the most intriguing object found within Leo Minor’s borders is Hanny’s Voorwerp. This unusual deep-space object is thought to be a possible “light echo” of a quasar in neighboring galaxy IC 2497 that has recently “switched off.” It was found by Hanny van Arkel, a Dutch schoolteacher, via her participation in the Galaxy Zoo citizen science project. Since then a few more intriguing objects similar to Hanny’s discovery have been found, called “Voorwerpjes.”

Lynx and Leo Minor are relatively “new” constellations, as they were both created by the legendarily sharp-eyed European astronomer Johannes Hevelius in the late 1600s. A few other constellations originated by Hevelius are still in official use: Canes Venatici, Lacerta, Scutum, Sextans, and Vulpecula. What if your eyes aren’t quite as sharp as Johannes Hevelius – or if your weather and light pollution make searching for fainter stars more difficult than enjoyable? See if you can spot the next Voorwerp by participating in one of the many citizen science programs offered by NASA at science.nasa.gov/citizenscience/! And of course, you can find the latest updates and observations of even more dim and distant objects at nasa.gov.



Map of the sky around Lynx and Leo Minor. Notice the prevalence of animal-themed constellations in this area, making it a sort of celestial menagerie. If you are having difficulty locating the fainter stars of Leo Minor and Lynx, don't fret; they are indeed a challenge. Hevelius even named the constellation as reference to the quality of eyesight one needs in order to discern these faint stars, since supposedly one would need eyes as sharp as a Lynx to see it! Darker skies will indeed make your search easier; light pollution, even a relatively bright Moon, will overwhelm the faint stars for both of these celestial wildcats. While you will be able to see NGC 2419 with a backyard telescope, Hanny's Voorwerp is far too faint, but its location is still marked. A few fainter constellation labels and diagrams in this region have been omitted for clarity. Image created with assistance from Stellarium



Hanny's Voorwerp and the neighboring galaxy IC 2497, as imaged by Hubble. Credits: NASA, ESA, W. Keel (University of Alabama), and the Galaxy Zoo Team Source: hubblesite.org/content/news-releases/2011/news-2011-01.html

WHAT'S HAPPENING IN APRIL 2022

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 New Moon M104 is well placed	2 Mercury at superior solar conjunction
3 Lunar occultation of Uranus	4 Conjunction of Saturn and Mars M94 is well placed Close approach of Saturn and Mars	5 NGC 4755 is well placed	6 C/2021 F1 (Lemmon-PANSTARRS) at perihelion	7 The Moon at apogee	8	9 Moon at First Quarter
10	11	12 Conjunction of Jupiter and Neptune	13 Mercury at perihelion NGC 5128 is well placed Omega-Cen is well placed	14 136199 Eris at solar conjunction M51 is well placed	15	16 Full Moon M83 is well placed
17 M3 is well placed	18 Conjunction of Mercury and Uranus The Moon at aphelion	19 136108 Haumea at opposition The Moon at perigee	20	21	22 Lyrid meteor shower 2022	23 Moon at Last Quarter M101 is well placed
24 π -Puppis meteor shower 2022 Conjunction of the Moon and Saturn Close approach of the Moon and Saturn	25 Mercury at dichotomy 45P/Honda-Mrkos-Pajdusakova at perihelion Conjunction of the Moon and Mars Close approach of the Moon and Mars	26 Conjunction of the Moon and Venus Close approach of the Moon and Venus	27 Conjunction of the Moon and Jupiter Close approach of the Moon and Jupiter Conjunction of Venus and Neptune Close approach of Venus and Neptune	28 Mercury at highest altitude in evening sky The Moon at perihelion Asteroid 10 Hygiea at opposition	29 Mercury at greatest elongation east	30 Conjunction of Venus and Jupiter New Moon Partial solar eclipse Close approach of Venus and Jupiter

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

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

E-mail: pacinfo@prescottastronomyclub.org



BOARD OF DIRECTORS

President: Art Arnold-Roksandich

Vice President: Brian Blau

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At Large: EJ Van Horne

At Large: Dave Covey

At Large: Ken Olson

At Large: Pat Bledsoe



PAC COORDINATORS

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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



APOD MARCH 14, 2022
STAR FORMATION IN THE EAGLE NEBULA

Image Credit: NASA, ESA, Hubble

Processing & Copyright: Ignacio Diaz Bobillo & Diego Gravinese



Where do stars form? One place, star forming regions known as "EGGs", are being uncovered at the end of this giant pillar of gas and dust in the Eagle Nebula (M16). Short for evaporating gaseous globules, EGGs are dense regions of mostly molecular hydrogen gas that fragment and gravitationally collapse to form stars. Light from the hottest and brightest of these new stars heats the end of the pillar and causes further evaporation of gas and dust -- revealing yet more EGGs and more young stars. This featured picture was created from exposures spanning over 30 hours with the Earth-orbiting Hubble Space Telescope in 2014, and digitally processed with modern software by experienced volunteers in Argentina. Newborn stars will gradually destroy their birth pillars over the next 100,000 years or so -- if a supernova doesn't destroy them first.



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