Prescott Astronomy Club

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

AUGUST 2021

UPCOMING EVENTS

Wednesday, August 4 - Regular PAC meeting @ 6:30 PM. The meeting will be conducted virtually on Zoom hosted by Jeff Stillman. 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 in the Department of Astronomy and Planetary Science at Northern Arizona University, will describe atmospheric clouds and haze. He 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.

Saturday, August 7 - Starry Nights @ 7:30 PM at Pronghorn Park in Prescott Valley. Please e-mail John Baesemann (jbaesemann@q.com) if you would like to participate in the event.

Wednesday, August 11 - METASIG @ 5:00 PM at local restaurant. At this time, no Zoom events will be conducted for METASIG. Anyone wishing to organize a meeting should coordinate with Russell Chappell.

Wednesday, August 11 - Arizona Astrophotography Association @ 7:00 PM. The meeting will be conducted virtually on Zoom hosted by Jeff Stillman. Jeff will continue to detail techniques for deep-sky imaging.

Saturday, August 28 - Annual Club Picnic @ 12:00 PM at the large ramada at Watson Lake.

ANNUAL PAC PICNIC

by Doug Tilley

At the July 7th PAC general meeting, members approved the expenditure of $400 for the annual PAC picnic on Saturday, August 28. The picnic will be 12 to 4PM at the Watson Lake upper, large, ramada. The club will supply burgers, brats, buns and the fixings along with plates,

plasticware, napkins, etc. Participants will bring salads, desserts, and beverages; attendees should bring a dish to share with 6 or more and their own beverages. The club will also supply the parking passes so it will be important to let Doug Tilley know if you are planning to attend and how many will be in your party so he can purchase the groceries and the passes. The passes will be given to the gate guard, so just let the guard know that you are part of the Astronomy Club picnic. You can let Doug Tilley know if you are planning to attend either by phone at 206-369-2108 or by email at dougbt51@gmail.com .

Please note that there might be a chance of cancellation if the Covid-19 prevents the activity from happening; Doug will let you know at least a week before the picnic

CORNER THE GREAT SQUARE OF PEGASUS

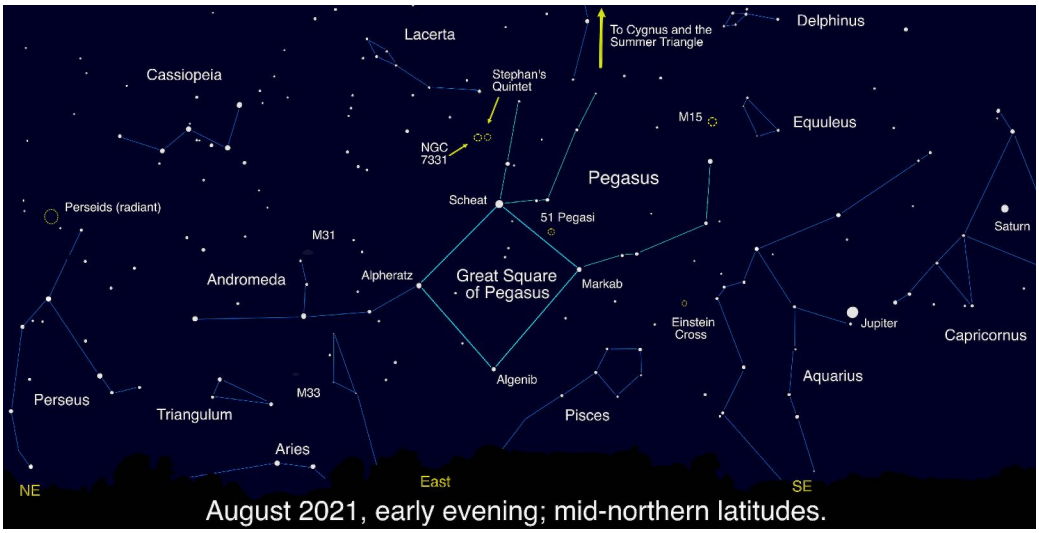
David Prosper

The Summer Triangle may be the most famous seasonal star pattern, but during early August evenings another geometrically-themed asterism rises: the Great Square of Pegasus. This asterism's name is a bit misleading: while three of its stars - Scheat, Markab, and Algenib - are indeed found in the constellation of the winged horse Pegasus, its fourth star, Alpheratz, is the brightest star in the constellation Andromeda!

August evenings are an excellent time to look for the Great Square, as it will be rising in the east after sunset. If not obvious at first, wait for this star pattern to rise a bit above the murky air, and remember that depending on your point of view, it may appear more like a diamond than a square. Look for it below the Summer Triangle, or to the southeast of nearby Cassiopeia at this time. As the Great Square rises in prominence during autumn evenings, it becomes a handy guidepost to finding more constellations, including some of the dimmer members of the Zodiac: Aries, Pisces, Aquarius, and Capricornus. Like the Summer Triangle, the Great Square of Pegasus is also huge, but Pegasus itself is even larger; out of the 88 constellations, Pegasus is 7th in size, and feels larger as the stars in its neighboring constellations are much dimmer.

There are many notable deep-sky objects found within the stars of Pegasus - ranging from easily spotted to expert level targets - making it a great constellation to revisit as your observing skills improve. Notable objects include the densely-packed stars of globular cluster M15, a great first target. The potential "Milky Way look-alike" galaxy NGC 7331 is a fun target for more advanced observers, and expert observers can hop nearby to try to tease out the much dimmer interacting galaxies of Stephan's Quintet. A fascinating (but extremely difficult to observe) object is a gravitationally-lensed quasar famously known as the Einstein Cross. Pegasus has quite a storied history in the field of exoplanet research: 51 Pegasi was the first Sun-like star discovered to be host to a planet outside our solar system, now officially named Dimidiam.

While observing Pegasus and its surroundings, keep your eyes relaxed and ready to catch some Perseids, too! August 2021 promises an excellent showing of this annual meteor shower. The crescent Moon sets early on the evening of the shower's peak on August 11-12, but you can spot stray Perseids most of the month. If you trace the path of these meteors, you'll find they originate from one point in Perseus - their radiant. Giant planets Jupiter and Saturn will be up all evening as well. Look south - they easily stand out as the brightest objects in the faint constellations Aquarius and Capricornus.



While the stars of the Great Square of Pegasus are not as bright as those of the Summer Triangle, they still stand out compared to their neighbors, and make a great foundation for exploring this area of the night sky. Note that the brightness of the stars near the horizon is exaggerated in this picture.

Stephan's Quintet is one of the most famous deep-sky objects in Pegasus. First discovered in 1877, it contains the first galaxy group discovered (which includes 4 of the 5 galaxies making up the Quintet) – and has been studied extensively ever since. One day this group will merge into one supergalaxy! While famous, these galaxies are hard to spot in all but the largest backyard telescopes – but are a favorite target of astrophotographers. Take a virtual flyby of these galaxies with a tour created from Hubble data at: bit.ly/quintetflyby Credit: NASA, ESA, and G. Bacon, J. DePasquale, F. Summers, and Z. Levay (STScI).

WHAT'S HAPPENING IN AUGUST 2021

This calendar from In-The-Sky.org shows the objects and events visible during August 2021.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Mercury at superior solar conjunction	2 Saturn at opposition The Moon at apogee	3	4	5	6	7
8 New Moon	9 The Moon at perihelion Conjunction of the Moon and Mars	10	11 Conjunction of the Moon and Venus Close approach of the Moon and Venus	12 Perseid meteor shower 2021 Asteroid 349 Dembowska at opposition	13	14 M15 is well placed
15 Moon at First Quarter M2 is well placed	16	17 The Moon at perigee	18 κ-Cygnid meteor shower 2021 Conjunction of Mercury and Mars	19 Asteroid 43 Ariadne at opposition Jupiter at opposition Uranus enters retrograde motion	20 Conjunction of the Moon and Saturn The Moon at aphelion Close approach of the Moon and Saturn	21 Conjunction of the Moon and Jupiter
22 Close approach of the Moon and Jupiter Full Moon	23	24 Asteroid 89 Julia at opposition Mercury at highest altitude in evening sky	25	26	27	28
29 The Moon at apogee	30 Moon at Last Quarter	31				

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.

ANNUAL FLAGSTAFF STAR PARTY

The 8th Annual Flagstaff Star Party will be held September 30, October 1 and 2 at Flagstaff's Buffalo Park. Details regarding the event are at the end of the newsletter.

NEED TO KNOW - ASK A MEMBER

A new 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 John Carter (jrcpvaz@icloudcom). 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.

Jeff Stillman - Astrophotography - (928) 379-7088

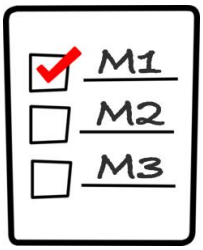
David Viscio - General - (928) 775-2918

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

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

John Carter - Video Observing - (928) 458-0570

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	Binocular Showpieces
Bright Nebulae	Caldwell
Dunlop 100	Face-On Spiral Galaxies
Globular Clusters	Herschel 400
Herschel II	Hidden Treasures
Messier	Open Clusters
Planet Maps	Planetary Nebulae
Royal Astronomical Society of Canada Finest NGC	
Saguaro Astronomy Club Best NGC	S&T Lunar 100
Telescope Showpieces	The Secret Deep

PAC WEBSITE & YAHOO GROUPS

Website**:** http://www.prescottastronomyclub.org

E-mail: pacinfo@prescottastronomyclub.org

Arizona Astrophotography Association:

https://www.facebook.com/groups/azastro

BOARD OF DIRECTORS

President: Jeff Stillman	At Large: Jason Hoover
Vice President: Open	At Large: Dave Covey
Secretary: Open	At Large: Doug Tilley
Treasurer: Art Arnold-Roksandich	At Large: Pat Bledsoe

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Facebook: Adam England
Highland Center Coordinator: David Viscio
Membership: Art Arnold-Roksandich
METASIG: Russell Chappell
Newsletter: David Viscio
Night Sky Network: John Carter
PAC Affiliate Partner w/ NAU Space Grant Program – Cory Shaw
PAC Store Sales - John Verderame
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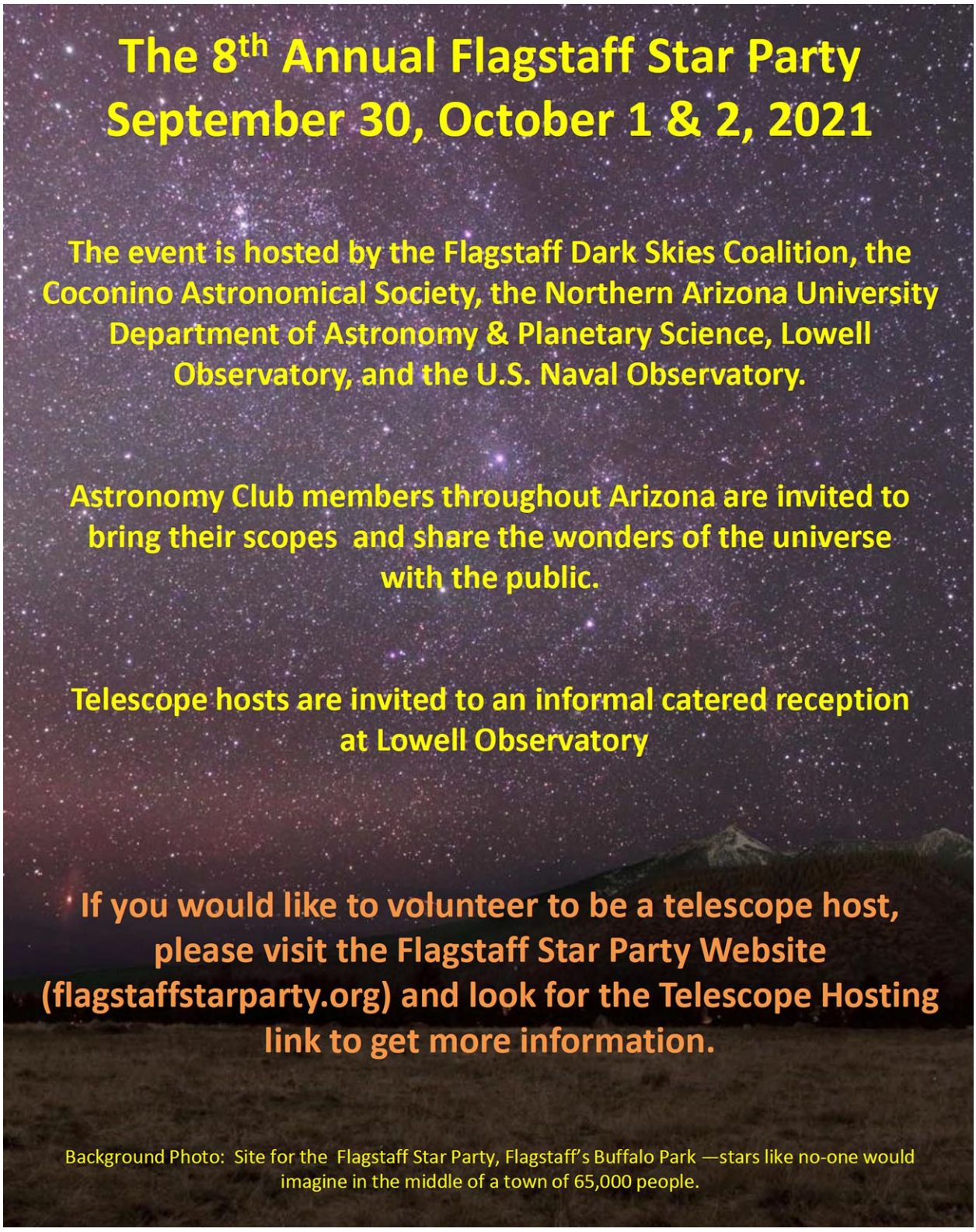
Public Relations: Adam England
Refreshments: Open
Schools & Camps Outreach: Don Beaman & Joel Cohen
Starry Nights Coordinator: Don Beaman & Joel Cohen
Third Thursday Coordinator: Dave Covey
Webmaster: Russell Chappell

JULY 18, 2021 APOD: THE ANDROMEDA GALAXY IN ULTRAVIOLET

Image Credit: NASA, JPL-Caltech, GALEX

What does the Andromeda galaxy look like in ultraviolet light? Young blue stars circling the galactic center dominate. A mere 2.5 million light-years away, the Andromeda Galaxy, also known as M31, really is just next door as large galaxies go. Spanning about 230,000 light-years, it took 11 different image fields from NASA's Galaxy Evolution Explorer (GALEX) satellite telescope to produce this gorgeous portrait of the spiral galaxy in ultraviolet light in 2003. While its spiral arms stand out in visible light images, Andromeda's arms look more like rings in ultraviolet. The rings are sites of intense star formation and have been interpreted as evidence that Andromeda collided with its smaller neighboring elliptical galaxy M32 more than 200 million years ago. The Andromeda galaxy and our own comparable Milky Way galaxy are the most massive members of the Local Group of galaxies and are projected to collide in several billion years -- perhaps around the time that our Sun's atmosphere will expand to engulf the Earth.


The 8th Annual Flagstaff Star Party
September 30, October 1 & 2, 2021
The event is hosted by the Flagstaff Dark Skies Coalition, the Coconino Astronomical Society, the Northern Arizona University Department of Astronomy & Planetary Science, Lowell Observatory, and the U.S. Naval Observatory.
Astronomy Club members throughout Arizona are invited to bring their scopes and share the wonders of the universe with the public.
Telescope hosts are invited to an informal catered reception at Lowell Observatory
If you would like to volunteer to be a telescope host, please visit the Flagstaff Star Party Website (flagstaffstarparty.org) and look for the Telescope Hosting link to get more information.
Background Photo: Site for the Flagstaff Star Party, Flagstaff's Buffalo Park —stars like no-one would imagine in the middle of a town of 65,000 people.