



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

JULY 2021

UPCOMING EVENTS



Wednesday, July 7 - 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.

Adam Block, Mount Lemmon Observatory will present “*Astronomy with an Astrograph*”. He will describe the nature of the science and astrophotography he does using a small telescope atop Mount Lemmon. Topics will include the space situational awareness, the brightness of the night sky and the science of some of the astrophotography he lucky is able to do.

Wednesday, July 14 - 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, July 14 - Arizona Astrophotography Association @ 7:00 PM. The meeting will be conducted virtually on Zoom hosted by John Carter. John will continue to detail techniques for deep-sky imaging.

ANNUAL PAC PICNIC

by Jeff Stillman

The annual PAC picnic/potluck is planned for August 28th from 12:00p to 4:00p at the Watson Lake ramada. PAC will provide the hamburgers, hotdogs and utensils. Attendees should bring a dish to share with 6 or more and their own beverages. PAC needs your vote at the July 7th general meeting to approve the expenditures for the PAC picnic (ramada rental, food, etc). The amount requested is \$400. It is very important that members attend the July general meeting and cast their vote for this expenditure. Without membership vote and approval, we cannot host the PAC picnic.

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.

OBSERVE THE MILKY WAY AND GREAT RIFT

David Prosper

Summer skies bring glorious views of our own Milky Way galaxy to observers blessed with dark skies. For many city dwellers, their first sight of the Milky Way comes during trips to rural areas - so if you are traveling away from city lights, do yourself a favor and look up!



To observe the Milky Way, you need clear, dark skies, and enough time to adapt your eyes to the dark. Photos of the Milky Way are breathtaking, but they usually show far more detail and color than the human eye can see – that’s the beauty and quietly deceptive nature of long exposure photography. For Northern Hemisphere observers, the most prominent portion of the Milky Way rises in the southeast as marked by the constellations Scorpius and Sagittarius. Take note that, even in dark skies, the Milky Way isn’t easily visible until it rises a bit above the horizon and the thick, turbulent air which obscures the view. The Milky Way is huge, but is also rather faint, and our eyes need time to truly adjust to the dark and see it in any detail. Try not to check your phone while you wait, as its light will reset your night vision. It’s best to attempt to view the Milky Way when the Moon is at a new or crescent phase; you don’t want the Moon’s brilliant light washing out any potential views, especially since a full Moon is up all night.

Keeping your eyes dark adapted is especially important if you want to not only see the haze of the Milky Way, but also the dark lane cutting into that haze, stretching from the Summer Triangle to Sagittarius. This dark detail is known as the Great Rift, and is seen more readily in very dark skies, especially dark, dry skies found in high desert regions. What exactly is the Great Rift? You are looking at massive clouds of galactic dust lying between Earth and the interior of the Milky Way. Other “dark nebulae” of cosmic clouds pepper the Milky Way, including the famed Coalsack, found in the Southern Hemisphere constellation of Crux. Many cultures celebrate these dark clouds in their traditional stories along with the constellations and Milky Way.

Where exactly is our solar system within the Milky Way? Is there a way to get a sense of scale? The “Our Place in Our Galaxy” activity can help you do just that, with only birdseed, a coin, and your imagination: bit.ly/galaxyplace. You can also discover the amazing science NASA is doing to understand our galaxy – and our place in it - at nasa.gov.



The Great Rift is shown in more detail in this photo of a portion of the Milky Way along with the bright stars of the Summer Triangle. You can see why it is also called the “Dark Rift.” Credit: NASA / A.Fujii



*If the Milky Way was shrunk down to the size of North America, our entire Solar System would be about the size of a quarter. At that scale, the North Star, Polaris - which is about 433 light years distant from us - would be 11 miles away! Find more ways to visualize these immense sizes with the *Our Place in Our Galaxy* activity: bit.ly/galaxyplace*

WHAT'S HAPPENING IN JULY 2021

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Moon at Last Quarter M22 is well placed IC4756 is well placed	2	3 Close approach of Venus and M44
4 Mercury at greatest elongation west	5 The Moon at apogee The Earth at aphelion	6	7 15P/Finlay reaches its brightest Conjunction of the Moon and Mercury	8	9 Mercury at dichotomy NGC 6752 is well placed New Moon The Moon at perihelion	10 C/2020 T2 (Palomar) at perihelion
11	12 Conjunction of the Moon and Venus Conjunction of the Moon and Mars Mars at aphelion	13 Mercury at highest altitude in morning sky Conjunction of Venus and Mars Close approach of Venus and Mars	14 15P/Finlay at perihelion	15	16	17 Moon at First Quarter M55 is well placed
18 134340 Pluto at opposition Asteroid 6 Hebe at opposition	19	20	21 The Moon at perigee	22	23 The Moon at aphelion Mercury at perihelion Full Moon	24 Conjunction of the Moon and Saturn Close approach of the Moon and Saturn
25 Conjunction of the Moon and Jupiter Close approach of the Moon and Jupiter	26	27	28 Piscis Austrinid meteor shower 2021	29	30 Southern δ -Aquiriid meteor shower 2021 α -Capricornid meteor shower 2021 Asteroid 12 Victoria at opposition	31 Moon at Last Quarter

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.

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@icloud.com). 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

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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

JUNE 5, 2021 APOD: THE SHINING CLOUDS OF MARS

Image Credit: NASA, JPL-Caltech, MSSS



The weathered and layered face of Mount Mercou looms in the foreground of this mosaic from the Curiosity Mars rover's Mast Camera. Made up of 21 individual images the scene was recorded just after sunset on March 19, the 3,063rd martian day of Curiosity's on going exploration of the Red Planet. In the martian twilight high altitude clouds still shine above, reflecting the light from the Sun below the local horizon like the noctilucent clouds of planet Earth. Though water ice clouds drift through the thin martian atmosphere, these wispy clouds are also at extreme altitudes and could be composed of frozen carbon dioxide, crystals of dry ice. Curiosity's Mast Cam has also imaged iridescent or mother of pearl clouds adding subtle colors to the martian sky.

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.