



Newsletter of the Pomona Valley Amateur Astronomers

The difference between being stupid and genius is
that genius has its limits.

A. Einstein



Volume 45 Number 7

nightwatch

July 2025

Club Events Calendar

July 2	Board Meeting 6:15 PM	Oct 1	Board Meeting 6:15 PM
July 11	General Meeting 6:30 PM Sujoy Modak "Black Holes: Ubiquitous in the Universe and Essential for a Unified Theory"	Oct 10	General Meeting 7:30 PM
		Oct 18	Star Party – GMARS
July 26	Star Party – GMARS	Oct 29	Board Meeting 6:15 PM
July 30	Board Meeting	Nov 7	General Meeting 7:30 PM
Aug 8	General Meeting 6:30 PM	Nov 22	Star Party – GMARS
Aug 23	Star Party – GMARS	Dec 3	Board Meeting 6:15 PM
Aug 27	Board Meeting	Dec 6	Holiday Party
Sep 5	General Meeting 7:30 PM		
Sept 20	Star Party – GMARS		

PVAA Officers and Board

Officers

President	Ken Elchert	thespaceshuttle@aol.com
Vice President ..	Joe Hillberg	909-949-3650
Secretary	Richard Wismer	
Treasurer	Gary Thompson	909-935-5509

Board

Jim Bridgewater (2026).....	909-599-7123
Claire Stover(2026)	pvaanightwatch@gmail.com
Ron Hoekwater (2027).....	909-445-9282
Howard Maculsay (2027).....	909-913-1195

Directors

Membership / Publicity....	Gary Thompson	909-935-5509
Outreach	Jeff Schroeder	909-758-1840
Programs	Ron Hoekwater	909-445-9282

President's Message

Greetings to all PVAA members! I thank all of you who voted at the July 2 general meeting! It is indeed a privilege and an honor to have been given this opportunity to lead the “best deal” in southern California! And I thank Matt Wedel for having led this fine organization for all the years that he was president. I thank you also for electing the other officers for this 48th year of the PVAA -- Joe Hillberg (Vice President), Gary Thompson (Treasurer), Richard Wismer (Secretary) – and members of the board: Ron Hoekwater, Claire Stover, Jim Bridgewater and Howard Maculsay. Most are long-time PVAA members and I look forward to working with them.

I am a retired aerospace engineer and have been a member of the PVAA for over ten years. I was PVAA secretary for three years – the summer of 2018 to the summer of 2021. In addition, I have given numerous presentations at PVAA general meetings. Currently, I present the upcoming celestial events that can be seen in southern California each month. My emphasis and goal will be to grow the PVAA membership by doing more outreach. I am therefore continuing the free public telescope viewing in Joat Park (aka Cahuilla Park) in Claremont. For this year, viewing will start just prior to sunset on the following dates: August 2 and 30, September 27 and November 1.

Needless to say, this is an exciting time in astronomy. First Light was just achieved by the Vera C. Rubin Observatory and the Hubble Space Telescope and James Webb Space Telescope are returning spectacular images and science data on celestial objects from our solar system all the way to the era shortly after the Big Bang. The LIGO instruments are detecting ripples in the spacetime continuum caused by the mergers of Black Holes and neutron stars as predicted by Albert Einstein over a century ago.

Spacecraft are in orbit around, and roving on the surface of, Mars. Juno is exploring Jupiter and its moons. And five spacecraft are on their way to study asteroids -- Psyche will study the metallic asteroid Psyche, Lucy is on its way to explore Jupiter's Trojan asteroids, Osiris-Apex is traveling to the asteroid Apophis and Hera is on its way to the asteroid Dimorphos to determine how effective the DART spacecraft was in diverting that asteroid by its impact and China's Tianwen-2 is traveling to quasi-moon 469219 Kamo'oalewa to return a sample of that asteroid. Finally, NASA is planning to send astronauts to walk on the Moon in 2027 on the Artemis Program after 55 years to begin a new era of lunar exploration and discovery.

We are seeing the future unfold before us! Onward and upward!

Ken Elchert

June 13 2025 General Meeting

The meeting started off with a reminder that club dues are due, as are nominations for next month's vote for the club officers and board members. Ken Elchert has stepped in as temporary club president, as Matt Wedel stepped down due to time constraints.

The first presentation was from Ken Elchert, as he gave his monthly "Astronomical & Aerospace Events" report. Ken considered the best event to see was the lunar occultation of Mars on June 30th. You will also get a great chance to see Mercury on July 4th, with its greatest elongation of 25.9 degrees above the horizon.

Three good places to get monthly astronomical happenings are:

<https://www.skymaps.com/downloads.html>,

<https://www.kenpress.com> and

<https://earthsky.org/astronomy-essentials/visible-planets-tonight-mars-jupiter-venus-saturn-mercury/>.

On the aerospace side, CRS-32 – a cargo version of the SpaceX Dragon - returned to Earth splashing down just off the coast near Camp Pendleton. A brand-new crew version of the Dragon will be taking four people from four different countries to the International Space Station. The date has been delayed by weather and a leak in the Russian section of the space station.

The latest test flight of the SpaceX Starship ended with the booster exploding on its return to Earth, and the Starship developing a leak, and not surviving reentry.

Japan's Hakuto-R Mission 2 to the moon crashed on the moon instead of having a soft landing.

The main speaker of the night was Dr. Jeff Rich of the Carnegie Science Observatories. His topic was 'The Past, Present and Future of Astronomy at Carnegie Observatories.' The Carnegie Institution for Science was founded in 1902 by Andrew Carnegie, dedicated to scientific discovery "to encourage, in the broadest and most liberal manner, investigation, research, and discovery and application of knowledge to the improvement of mankind." The Carnegie scientist covers Astronomy and Astrophysics to Life and the Environment. The Carnegie Foundation was the main backer for Mount Wilson's 60- and 100-inch telescopes, along with the 200-inch Mount Palomar telescope. Dr. Edwin Hubble used the Mount Wilson telescopes to prove that there are separate and distant galaxies apart from the Milky Way. He also proved that the universe is expanding.

Due to light pollution, Carnegie started constructing telescopes in Chile. It currently has the Las Campanas Observatory in Chile and is constructing, with many partners, the twin Magellan Telescopes. The Magellan Telescopes each have 21-foot diameter mirrors. Following these there are plans for the European Extremely Large Telescope, the Thirty Meter Telescope, and the Giant Magellan Telescope. These are all having funding issues and are in various stages of completion.

Gary Thompson



Upcoming Celestial Events

events visible in ☉thern California
highlighted in yellow

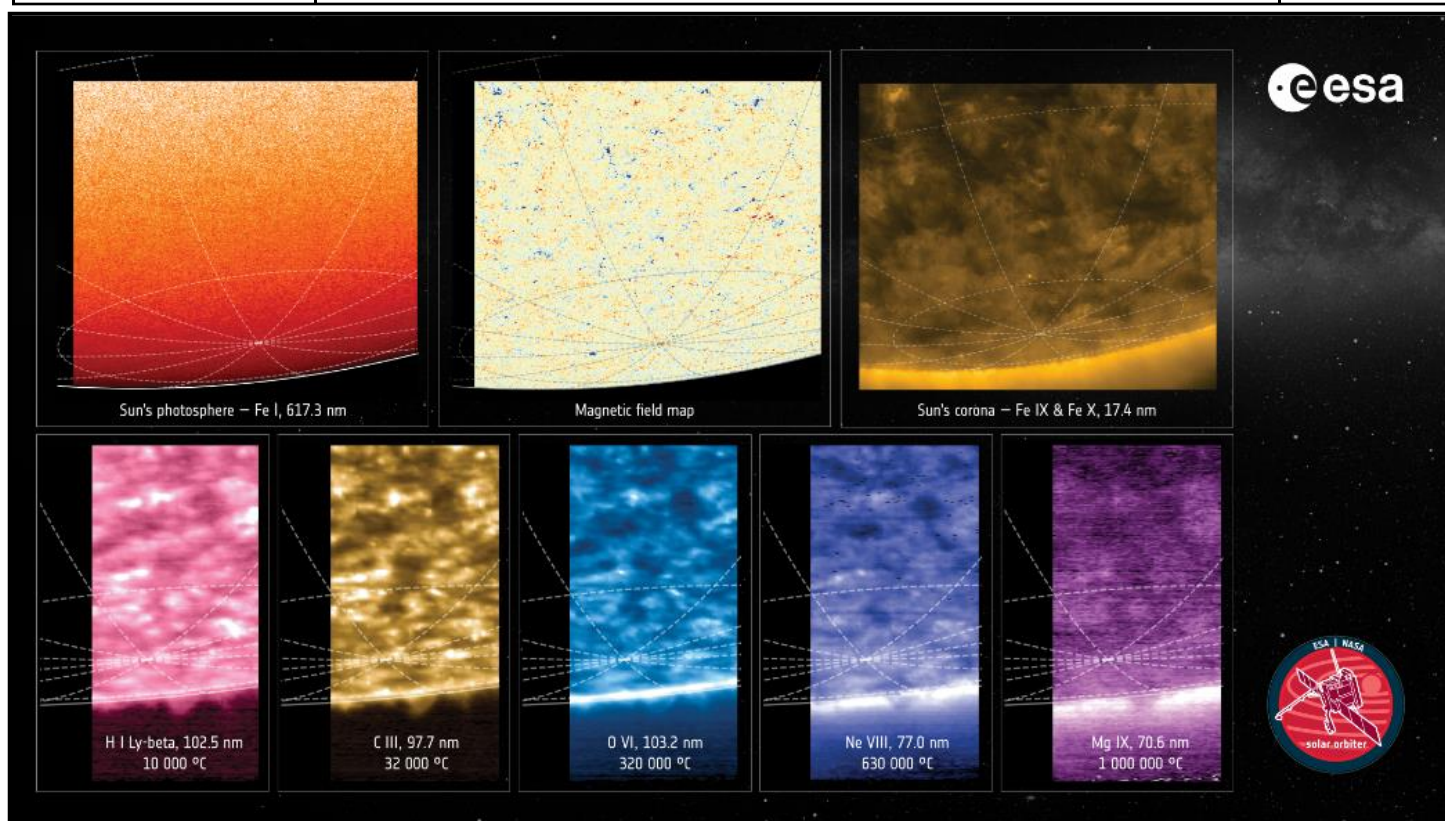
PST = UTC – 8 hrs
PDT = UTC – 7 hrs
PDT = PST + 1 hr

Date	Day	Visibility (LA Time)	Event	Direction	Altitude (deg)	Moon Phase/Illumination
June 16	Mon	7:05 pm (9:00 pm – 11:25 pm)	Mars-Regulus conjunction sep = 0.7°	W	35 to 5	Waning Gibbous 66.3%
June 18	Wed	Not visible	Moon-Saturn close sep = 3.0°	-----	-----	-----
June 20	Fri	7:42 pm	Summer Solstice (northern hemisphere) longest day / 1 st day of summer	-----	-----	-----
June 22	Sun	3:30 am – 5:10 am	Moon-Venus close sep = 6.5°	E	5 to 25	Waning Crescent 12%
June 25	Wed	3:33 am Not visible	New Moon	-----	-----	NM 0%
June 26	Thur	11:02 pm	Moon-Mercury close sep = 2.9°	WNW	8	Waxing Crescent 3.8%
June 26 - 28	Thur - Sat	9:00 pm – 4:00 am	June Boötes Meteor Shower peaks a few meteors per hour	WNW	-----	Waxing Crescent
June 30	Mon	3:56 pm – 8:34 pm (not vis) 8:45 pm – 11:00 pm	Lunar occultation of Mars post-emergence	W	33 to 5	Waxing Crescent 24.7%
July 3	Thur	2:43 pm (not vis) 9:00 pm	Lunar occultation of Spica sep = 3.0°	SSW	40	Waxing Gibbous 62.9%
July 4	Fri	After sunset	Mercury @ Greatest Western Elongation elong = 25.9°	W	10 to 4	Waxing Gibbous 71.7%
July 10	Thur	1:38 pm	Full Moon	E – S – W	5 – 27.5 – 5	FM 100%

Lunation No. 1267

Lunation No. 1268

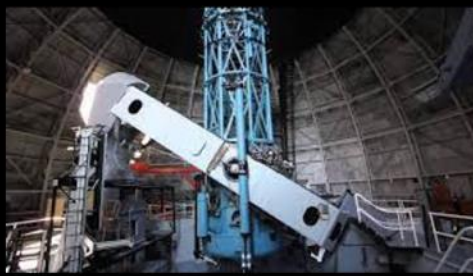
Earth will reach aphelion at 12:54 pm PDT on July 3 (center-to-center distance = 152,087,738 km = 94,502,939 mi)



Carnegie Observatories



Mt Wilson 60-inch



Mt Wilson 100-inch



Palomar 200-inch

Stay connected to Carnegie Science by getting their newsletter



QR Code for the Carnegie Science Newsletter

Los Angeles: c. 1910



Los Angeles: 1925



Los Angeles: 2002



Las Campanas Observatory, Chile

A Century of Discovery at Carnegie

Magnetic Fields in the Sun - Hale (1900's)
Size of the Milky Way Galaxy – Shapley (1910's)
External Galaxies – Hubble (1920's)
Expansion of the Universe – Hubble (1920's)
Neutron Stars predicted– Baade/Zwicky (1940's)
Discovery of Quasars – Schmidt (1960's)
Dark Matter in Galaxies – Rubin (1970's)
Massive Black Holes in Galaxies – Dressler (1980's)
First detection of planets around stars – Butler (1990's)
Precise Age & Size of the Universe – Freedman (2000's)
Detecting Dark Energy – Phillips (2000's)

Caltech

-George Ellery Hale joined the Board in 1907 and led efforts to convert Throop vocational school to what is now Caltech (1921)

-Caltech faculty and alumni have produced 46 Nobel Prizes

Some important astronomical contributions:

Discovery of minor planets (demotion of Pluto) – Brown (2000's)

First detection of gravitational waves – Thorne and the LIGO team (2016)



This article is distributed by NASA's Night Sky Network (NSN).

The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit go.nasa.gov/nightskynetwork to find local clubs, events, and more!

July's Night Sky Notes: Spy the Scorpion

By: Kat Troche

As summer deepens in the Northern Hemisphere, a familiar constellation rises with the galactic core of the Milky Way each evening: Scorpius the Scorpion. One of the twelve zodiacal constellations, Scorpius contains many notable objects, making it an observer's delight during the warmer months. Here are some items to spy in July:



The star map of the Scorpius constellation highlights the star Antares and several notable deep-sky objects like the Rho Ophiuchi Complex, Messier 4, the Cat's Paw Nebula, and Caldwell 76, the Baby Scorpion Cluster. Credit: Stellarium Web

- **Antares:** referred to as “the heart of the scorpion,” this supergiant has a distinct reddish hue and is visible to the naked eye. If you have good skies, try to split this binary star with a

medium-sized telescope. Antares is a double star with a white main-sequence companion that comes in at a 5.4 magnitude.

- **Messier 4:** one of the easiest globular clusters to find, M4 is the closest of these star clusters to Earth at 5,500 light years. With a magnitude of about 5.6, you can spot this with a small or medium-sized telescope in average skies. Darker skies will reveal the bright core. Use Antares as a guide star for this short trip across the sky.
- **Caldwell 76:** If you prefer open star clusters, locate C76, also known as the Baby Scorpion Cluster, right where the 'stinger' of Scorpius starts to curve. At a magnitude of 2.6, it is slightly brighter than M4, albeit smaller, and can be spotted with binoculars and the naked eye under good sky conditions.



A digital map of the Rho Ophiuchi Complex. Credit: Stellarium Web

Lastly, if you have an astrophotography set up, capture the [Cat's Paw Nebula](#) near the stinger of Scorpius. You can also capture the [Rho Ophiuchi cloud complex](#) in the nearby constellation Ophiuchus. Brilliant Antares can be found at the center of this wondrous structure.

Manaiakalani

While many cultures tell tales of a ‘scorpion’ in the sky, several Polynesian cultures see the same stars as the demigod Māui's fishhook, [Manaiakalani](#). It is said that Māui didn't just use his hook for giant fish in the sea, but to pull new islands from the bottom of the ocean. There are many references to the Milky Way representing a fish. As Manaiakalani rises from the southeast, it appears to pull the great celestial fish across a glittering sea of stars.

Measure Your Darkness

While you can use smartphone apps or dedicated devices like a Sky Quality Meter, Scorpius is a great constellation to measure your sky darkness with! On a clear night, can you trail the curve of the tail? Can you see the scorpion's heart? Use our free printable [Dark Sky Wheel](#), featuring the stars of Scorpius on one side and Orion on the other for measurements during cooler months. You can find this resource and more in the [Big Astronomy Toolkit](#).