



# THE LOS ANGELES ASTRONOMICAL SOCIETY

AUGUST, 2022  
VOLUME 96, ISSUE 8

# THE BULLETIN

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All members are encouraged to contribute articles of interest for publication in The Bulletin.

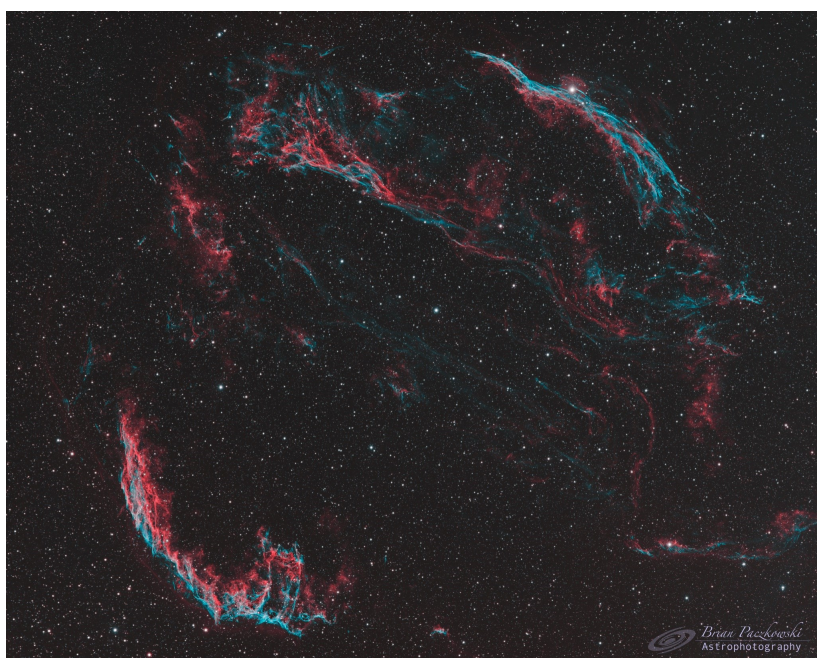
Please send your articles and images to:

[communications@laas.org](mailto:communications@laas.org)

## Update Your Contact Information

Please send any contact info changes to the club secretary at

[secretary@laas.org](mailto:secretary@laas.org).



On the heels of the JWST images, I find it difficult to post these mediocre images. This is the Cygnus Loop in the constellation Cygnus. This very large supernova remnant, about 3 degrees in size, and is located about 2400 LYs from Earth. A total of 40 hours of narrowband data was used to create this false color image.

Photo Credit: Brian Paczkowski (July, 2022)

## Upcoming Club Events

Board Meeting: Aug. 3rd.

General Meeting: Aug. 6th

**Family Night: Aug. 20th.**

Dark Sky Night: Aug. 27th.

## Garvey Nights

The [Garvey Ranch Observatory](#) is open to the public on **Wednesday nights only** from 7 PM to 10 PM, weather permitting.

Masks are required inside the facilities.

# 60 and 100 Nights Schedule for 2022

## Mt. Wilson Observatory



### Session Schedule - 2022

The dates above are **all** scheduled on Saturday nights and are **all** half-night events:

Aug. 27

**Sept. 24 -This is the only 100 Inch session.**

Oct. 22

Nov. 19

### The Cost per person, per session:

60 Inch Night - \$65.00

100 Inch Night - \$145.00 (Booked/Waiting List only)

There will be 20 people, per session.

### How to Make a Reservation?

**Please contact Darrell Dooley BEFORE you pay for your reservation.**

*Darrell is our Mt. Wilson Coordinator and the **ONLY** contact available.*

Darrell's Email Address:

[Mtwilsoncoordinator@laas.org](mailto:Mtwilsoncoordinator@laas.org)

*Darrell will answer all of your questions and concerns.*

Reserve your spot by paying by credit cards or PayPal using the following link:

<https://fs30.formsite.com/LAAS/MtWilson/index.html>

Learn more about these incredible events by visiting Mt. Wilson Observatory's website:

<https://www.mtwilson.edu/60-telescope/>

<https://www.mtwilson.edu/100-telescope-observing/>

# The Dr. Herbert M. Bishop Observatory

## by Lewis Chilton

### Illustrated by Shane Winter

**“A journey out into the depths of space, where the planets twirl and great suns blaze forth in splendor unspeakable.”**

That’s how the Los Angeles Daily Times article began. It described a meeting of the Astronomical Section of the Southern California Science Association at the home of Dr. Herbert M. Bishop on the evening of February 5th, 1896 [1].

In 1896, nearly all Los Angeles residents were from someplace else, and Dr. Bishop was no exception. He was born in New London, Connecticut in 1844, graduated Yale Medical College in 1865 with a degree in homeopathic medicine and served as Assistant Surgeon in the 1st Connecticut Cavalry in the final year of the Civil War.

By 1892, Bishop had considered moving to Florida to establish a medical practice but opted instead for the up-and-coming city of Los Angeles where electrification had been ushered in only 9 years earlier. By 1891, Los

Angeles boasted 217 outdoor electric street lamps mounted on masts of varying heights or suspended over street intersections. (A prescient street sign could have read, “Light Pollution Ahead.”)

After establishing himself in his adopted city, Dr. Bishop’s longtime interest in astronomy led him to the Southern California Science Association where, in December, 1894, he was elected to membership. Organized three years earlier, the Association was divided into sections, each representing a different branch of science, with its own chairman, venues and speakers. The Astronomical Section organized in October, 1895 [2], with Bernhard R. Baumgardt [3] as its chairman. Its first meeting was held that month at the new home and observatory of Dr. Bishop, at the corner of Hoover and Adams streets in the University Park district. Built in the Greek revival style, it had a distinctive flat roof surmounted by a small, square building capped with a revolving dome. For many years, it was a constant source of fanciful speculation among area residents. The observatory housed a fine 7-inch reflecting telescope and was very likely the first astronomical observatory of its type in Los Angeles.



Fig. 1. LAAS member and graphic artist Shane Winter captured the appearance of the Bishop residence and observatory as it may have looked in a 19th century setting at Hoover and Adams streets in the University Park district of Los Angeles.

The second meeting at Dr. Bishop's home occurred in the early evening of February 5<sup>th</sup>, 1896, where members of the Astronomical Section and a reporter from the *Times* gathered in Dr. Bishop's spacious parlor. Chairman Baumgardt read a paper on the *Nebular Hypothesis* [4] and a lively discussion followed. The newspaper account does not name the others who were present, but one can speculate that they would have included William H. Knight, John D. Hooker, Abbott Kinney, Thaddeus S. C. Lowe, Prof. Melville Dozier, Samuel Keese, William Spalding and Dr. Charles Bush [5, 6].

After the meeting, attendees, including the *Times* reporter, followed Dr. Bishop up two flights of stairs to the roof and into the observatory, a few at a time. There they carried on an animated discussion begun downstairs, while pointing out the constellations in a cloudless sky. They called each other's attention to the splendor of Jupiter as it blazed forth at magnitude  $-2.58$  high in the east-southeast near the Praesepe (the Beehive Cluster; M44) in the constellation Cancer.

Meanwhile, Dr. Bishop turned his telescope southward to the Great Nebula in Orion as it approached culmination. In the flowery prose of the era, the *Times* reporter wrote that he "could see the places where the nebulous mist had drawn together into denser agglomerations of matter half-made suns – with a little space of velvet black around and then a shimmer of encircling light, the matter still wholly nebulous." "It gave a vivid impression of the speed with which this old earth whirls around to see the nebula drift across the field of vision out of sight." (It is obvious that Dr. Bishop's telescope was not equipped with a clock drive!)

Then Dr. Bishop trained his telescope on Jupiter and his attendant satellites. As each beholder glued an eye to the telescope eyepiece, an exclamation of wonder and delight was uttered, "so luminous and clear were the tiny moons ranged in the plane of the ecliptic around the mighty planet." And thus ends the account of that magical winter night 126 years ago.

The February 5, 1896 meeting at Dr. Bishop's home was apparently the last, although individual members, friends and guests probably continued to visit his observatory privately for many years after. A lingering illness took Dr. Bishop's life on April 23, 1919, at the age of 75. What became of his observatory is not known.

Fig. 2. A victim of urban renewal, the Greek Revival home of Dr. Herbert M. Bush, 2627 South Hoover Street, as it appeared in September, 1977, shortly before demolition. Originally equipped with a rooftop observatory, it was a popular rendezvous for local amateur astronomers. (Image: Los Angeles Public Library, William Reagh Collection.).



#### ENDNOTES

1. Only three months later, in May, 1896, the Southern California Science Association changed its name to the Southern California Academy of Sciences. It's still in existence, with headquarters at the Los Angeles County Natural History Museum in Exposition Park.
2. The Astronomical Section of the Southern California Academy of Sciences had dissolved by 1941, probably due to the onset of World War II and possibly from a losing competition for new members with the Los Angeles Astronomical Society.
3. Bernhard R. Baumgardt was the father of Mars F. Baumgardt who in 1926 became a charter member of the Los Angeles Astronomical Society when it was known as the Amateur Telescope Makers' Society.
4. Nebular Hypothesis –an explanation of how the solar system formed, first proposed by Pierre Simon de Laplace in 1796. Laplace said that the material from which the solar system formed was once a slowly rotating cloud, or nebula, of extremely hot gas. The gas cooled and the nebula began to shrink. As the nebula became smaller, it rotated more rapidly, becoming flattened at the poles. A combination of centrifugal force, produced by the nebula's rotation, and gravitational force, from the mass of the nebula, caused rings of gas to be left behind as the nebula shrank. These rings condensed into planets and their satellites, while the remaining part of the nebula formed the sun. In the early 20th century, the nebular hypothesis was rejected and the planetesimal theory, that the planets were formed from material drawn out of the sun, became popular. This theory, too, proved unsatisfactory. Later theories have revived the concept of a nebular origin for the planets, but not in the same form in which it was proposed by Laplace.
5. To learn more about these men, see [www.LAAS.org](http://www.LAAS.org) > Stay Informed > LAAS Member Articles > Laying the Groundwork for the LAAS – Amateur Astronomers Past – Parts 1 and 2.
6. "Who's Who on the Pacific Coast, a Biographical Compilation of Notable Living Contemporaries West of the Rocky Mountains," edited by Franklin Harper, published by the Harper Company, Los Angeles, CA, 1913; 633 pages, out of print.

# Artemis 1: A Trip Around the Moon – and Back!

By David Prosper

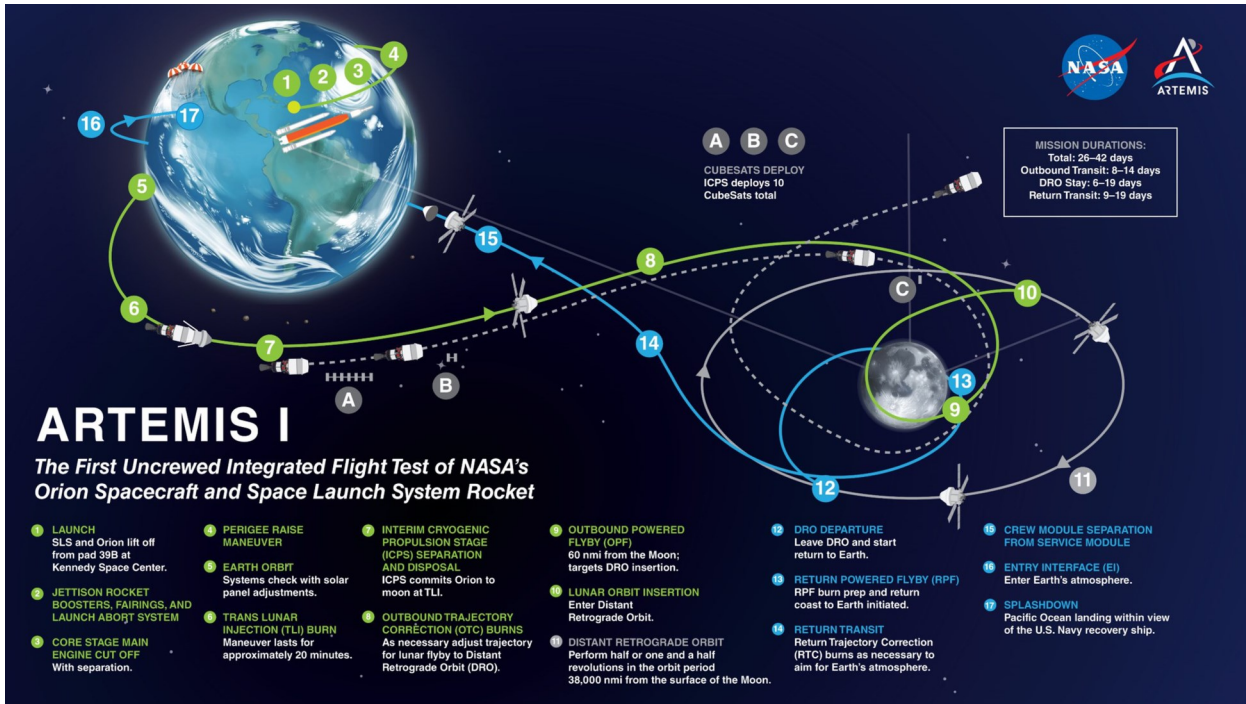
We are returning to the Moon - and beyond! Later this summer, NASA's Artemis 1 mission will launch the first uncrewed flight test of both the Space Launch System (SLS) and Orion spacecraft on a multi-week mission. Orion will journey thousands of miles beyond the Moon, briefly entering a retrograde lunar orbit before heading back to a splash-down on Earth.

The massive rocket will launch from Launch Complex 39B at the Kennedy Space Center in Florida. The location's technical capabilities, along with its storied history, mark it as a perfect spot to launch our return to the Moon. The complex's first mission was Apollo 10 in 1968, which appropriately also served as a test for a heavy-lift launch vehicle (the Saturn V rocket) and lunar spacecraft: the Apollo Command and Service Modules joined with the Lunar Module. The Apollo 10 mission profile included testing the Lunar Module while in orbit around the Moon before returning to the Earth. In its "Block-1" configuration, Artemis 1's SLS rocket will take off with 8.8 million pounds of maximum thrust, even greater than the 7.6 millions pounds of thrust generated by the legendary Saturn V, making it the most powerful rocket in the world!

Artemis 1 will serve not only as a test of the SLS and the Orion hardware, but also as a test of the integration of ground systems and support personnel that will ensure the success of this and future Artemis missions. While uncrewed, Artemis-1 will still have passengers of a sort: two human torso models designed to test radiation levels during the mission, and "Commander Moonikin Campos," a mannequin named by the public. The specialized mannequin will also monitor radiation levels, along with vibration and acceleration data from inside its mission uniform: the Orion Crew Survival Suit, the spacesuit that future Artemis astronauts will wear. The "Moonikin" is named after Arturo Campos, a NASA electrical engineer who played an essential role in bringing Apollo 13's crew back to Earth after a near-fatal disaster in space.

The mission also contains other valuable cargo for its journey around the Moon and back, including CubeSats, several space science badges from the Girl Scouts, and microchips etched with 30,000 names of workers who made the Artemis-1 mission possible. A total of 10 CubeSats will be deployed from the Orion Stage Adapter, the ring that connects the Orion spacecraft to the SLS, at several segments along the mission's path to the Moon. The power of SLS allows engineers to attach many secondary "ride-along" mission hardware like these CubeSats, whose various missions will study plasma propulsion, radiation effects on microorganisms, solar sails, Earth's radiation environment, space weather, and of course, missions to study the Moon and even the Orion spacecraft and its Interim Cryogenic Propulsion Stage (ICPS)!

If you want to explore more of the science and stories behind both our Moon and our history of lunar exploration, the Night Sky Network's Apollo 11 at 50 Toolkit covers a ton of regolith: [bit.ly/nsnmoon](https://bit.ly/nsnmoon)! NASA also works with people and organizations around the world coordinating International Observe the Moon Night, with 2022's edition scheduled for Saturday, October 1: [moon.nasa.gov/observe](https://moon.nasa.gov/observe). Of course, you can follow the latest news and updates on Artemis 1 and our return to the Moon at [nasa.gov/artemis-1](https://nasa.gov/artemis-1)



Follow along as Artemis 1 journeys to the Moon and back! A larger version of this infographic is available from NASA at: [nasa.gov/image-feature/artemis-i-map](https://www.nasa.gov/image-feature/artemis-i-map)



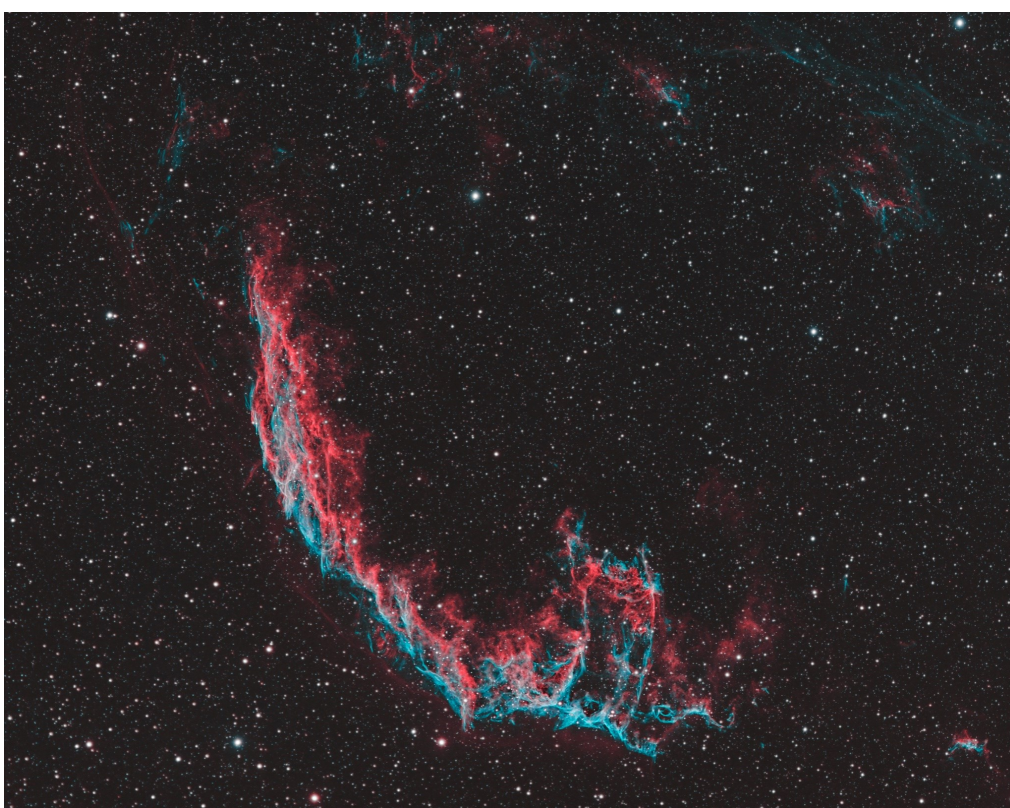
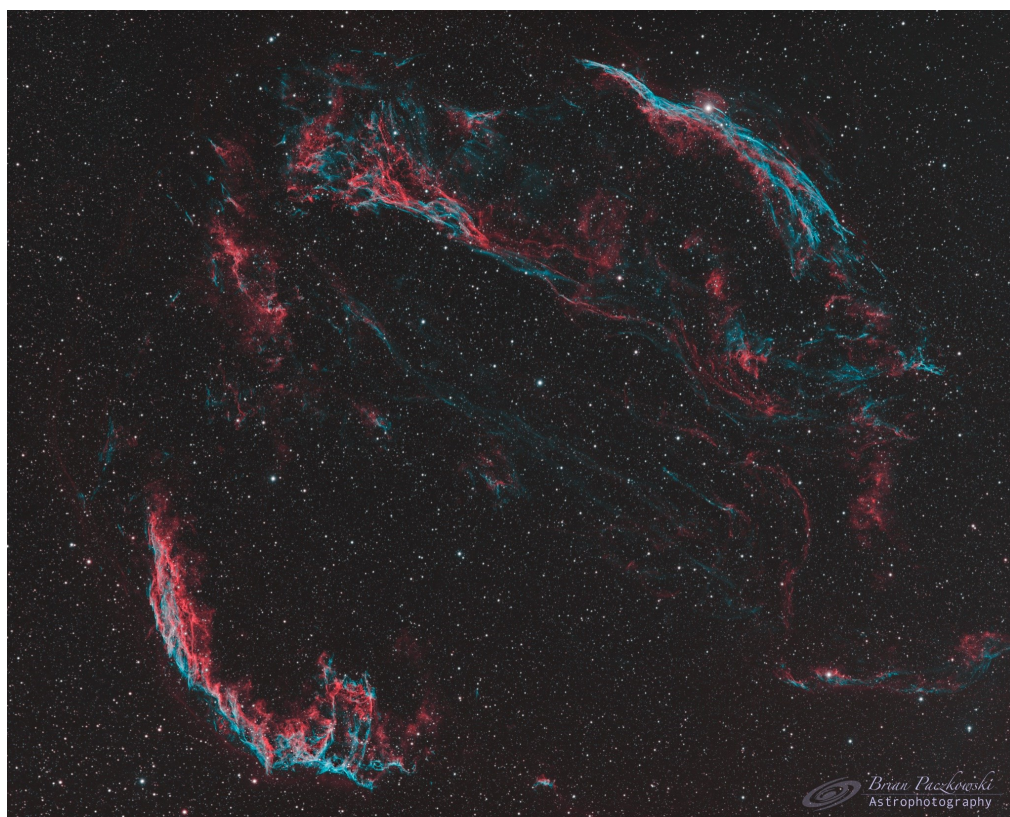
Full Moon over Artemis-1 on July 14, 2022, as the integrated Space Launch System and Orion spacecraft await testing. Photo credit: NASA/Cory Huston Source: <https://www.nasa.gov/image-feature/a-full-moon-over-artemis/>



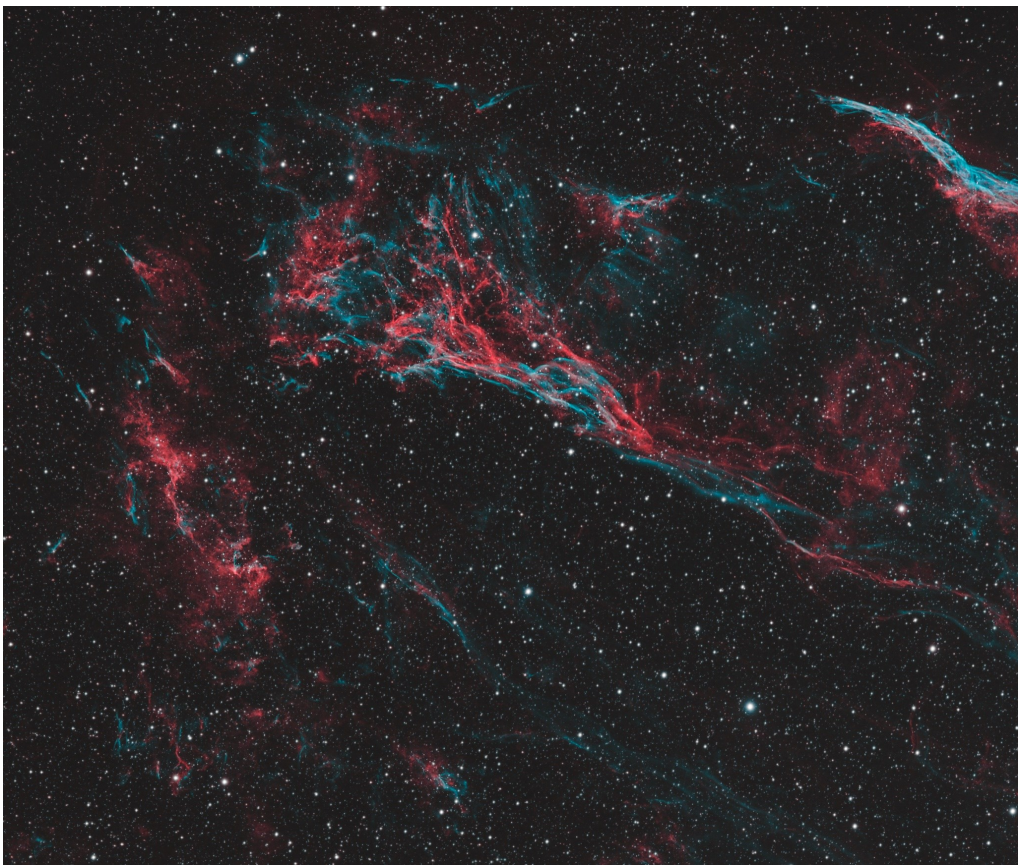
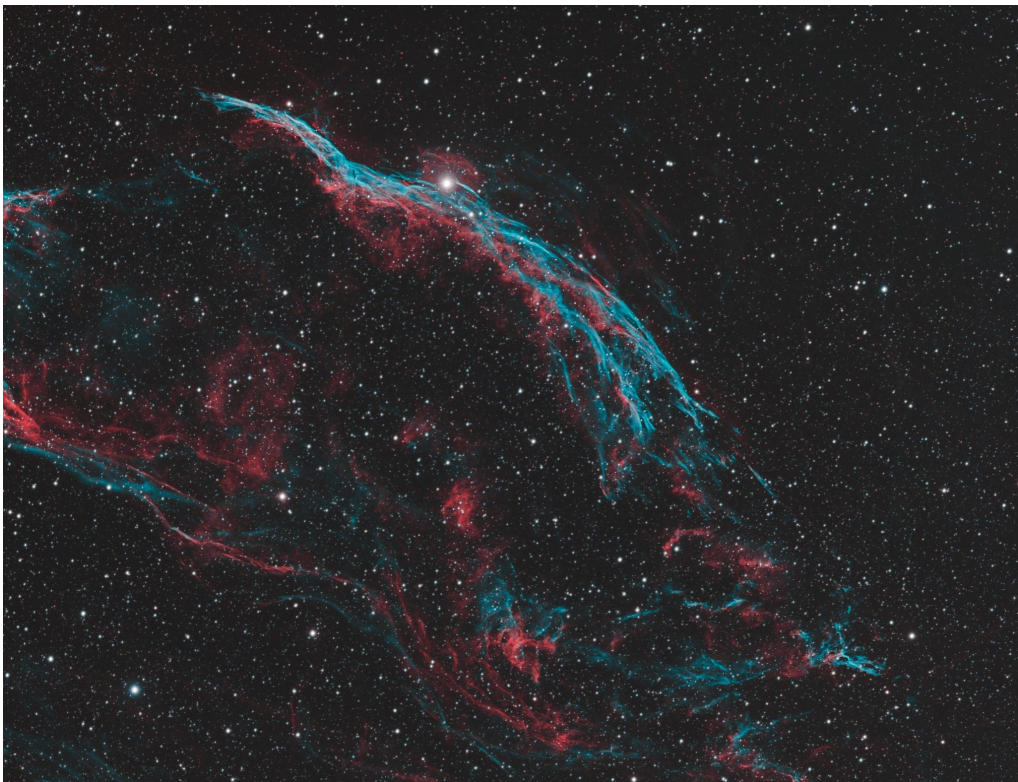
This article is distributed by NASA's Night Sky Network (NSN). The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

# The Cygnus Loop

By Brian Paczkowski







# Monthly Sky Report for July and August

By Dave Nakamoto

In the June article "The Night Sky" I erroneously reported that the sun moves from Leo the Lion into Virgo. That happens in September. From July through August, the sun moves from Gemini the Twins to Cancer the Crab, then into Leo the Lion. Days are gradually shorter as the sun approached the Autumnal equinox in September. All times are in PDT.

Sunrise Sunset Length of day

July 1<sup>st</sup> 5:45 a.m. 8:09 p.m. 14 hours, 26 mins.

Aug 1<sup>st</sup> 6:05 a.m. 7:54 p.m. 13 hours, 49 mins.

Aug 31<sup>st</sup> 6:25 a.m. 7:20 p.m. 12 hours, 55 mins.

In July, the moon's phases are

First quarter Full Last quarter New  
6<sup>th</sup> 13<sup>th</sup> 20<sup>th</sup> 28<sup>th</sup>.

In August, the moon's phases are

First quarter Full Last quarter New  
5<sup>th</sup> 11<sup>th</sup> 18<sup>th</sup> 27<sup>th</sup>.

Here are the times the planets start appearing in the night sky. Notice that Mercury transitions from the morning sky in July to the evening sky in August. All times are PDT.

July 1<sup>st</sup> Aug 1<sup>st</sup> Aug 31<sup>st</sup>

Mercury Rises 4:33 a.m. Sets 8:47 p.m. Sets 8:15 p.m.

Venus Rises 3:44 a.m. Rises 4:20 a.m. Rises 5:18 a.m.

Mars Rises 1:30 a.m. Rises 12:31 a.m. Rises 11:32 p.m.

Jupiter Rises 12:35 a.m. Rises 10:38 p.m. Rises 8:36 p.m.

Saturn Rises 10:40 p.m. Rises 8:35 p.m. Rises 6:30 p.m.

Uranus Rises 2:24 a.m. Rises 12:27 a.m. Rises 10:29 p.m.

Neptune Rises 12:04 a.m. Rises 10:02 p.m. Rises 8:02 p.m.

Mercury travels to the far side of its orbit during July and August, so while it is in a gibbous phase, it is small, so a telescope with magnification of 100x or larger is needed to see its disk.

Venus is also travelling to the far side of its orbit, so a telescope with a magnification of 100x or more is needed to see its disk, which will show a gibbous phase.

Mars is still very small, so a telescope capable of magnifications of 100x or more will be needed to see its small disk.

Jupiter's disk and the four Galilean moons are visible in telescopes with magnifications of 50x or more.

Saturn's disk is half the size of Jupiter, but the rings make it appear as large, so telescopes with a magnification of 50 or more will show the disk and rings, and its largest moon Titan.

Continued on following page

Uranus and Neptune are very small and always are, so a telescope with magnification of 150x or more will be needed to show their disks.

Here are their coordinates on the indicated dates.

Date R.A. Declination

Uranus July 15<sup>th</sup> 3<sup>h</sup> 2<sup>m</sup> 29<sup>s</sup> +16° 50' 16"

Aug 15<sup>th</sup> 3<sup>h</sup> 4<sup>m</sup> 53<sup>s</sup> +16° 59' 54"

Neptune July 15<sup>th</sup> 23<sup>h</sup> 43<sup>m</sup> 42<sup>s</sup> -3° 3' 53"

Aug 15<sup>th</sup> 23<sup>h</sup> 41<sup>m</sup> 57<sup>s</sup> -3° 16' 48"

Two meteor showers peak in July, one in August.

The Southern delta Aquariids peak on the night of July 29<sup>th</sup>. The radiant is in the southern part of the sky, so rates are low, and their meteors are usually faint.

The alpha Capricornids peak on the night of July 30<sup>th</sup>. This shower produces low rate, 5 per hour, but does produce bright fireballs.

During August, the Perseids peak on the night of August 11<sup>th</sup>. While they are quite famous, and while the rates are holding at about 50 per hour, they are usually faint with occasional fireballs.

The comet named C/2017 K2 ( PanSTARRS ) might be bright enough to be visible in binoculars or a small telescope.

Rise time R.A. Declination

July 1 5:34 p.m. 17<sup>h</sup> 26<sup>m</sup> 05<sup>s</sup> +01° 54' 39"

July 15 5:34 p.m. 16<sup>h</sup> 57<sup>m</sup> 08<sup>s</sup> -03° 33' 18"

Aug 1 5:34 p.m. 17<sup>h</sup> 26<sup>m</sup> 05<sup>s</sup> +01° 54' 39"

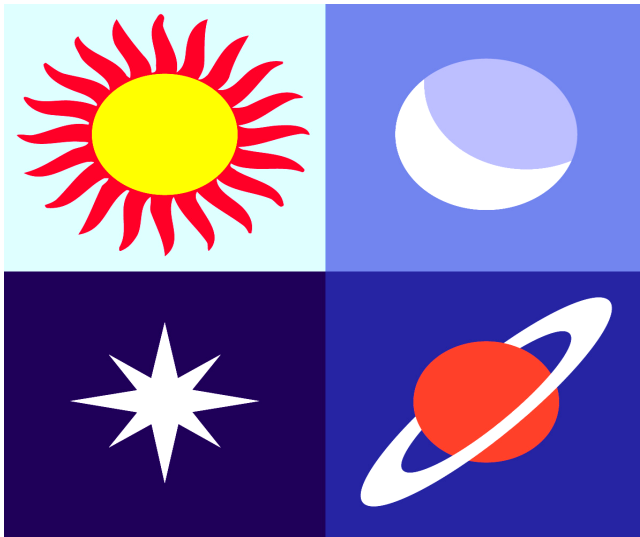
Aug 15 5:34 p.m. 16<sup>h</sup> 57<sup>m</sup> 08<sup>s</sup> -03° 33' 18"

Aug 31 3:13 p.m. 16<sup>h</sup> 28<sup>m</sup> 41<sup>s</sup> -10° 19' 49"

*David Nakamoto has been observing the heavens through various scopes since he was in the 5<sup>th</sup> grade. You can contact Dave by email at:*

*[dinakamoto@hotmail.com](mailto:dinakamoto@hotmail.com).*





## Almanac

**August 12 - Full Moon, Supermoon.** The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 01:36 UTC. This full moon was known by early Native American tribes as the Sturgeon Moon because the large sturgeon fish of the Great Lakes and other major lakes were more easily caught at this time of year. This moon has also been known as the Green Corn Moon and the Grain Moon. This is also the last of three supermoons for 2022. The Moon will be near its closest approach to the Earth and may look slightly larger and brighter than usual.



Curious about the objects in tonight's sky? Click on the link below to learn more.

<https://www.timeanddate.com/astronomy/night/usa/los-angeles>

**August 12, 13 - Perseids Meteor Shower.** The Perseids is one of the best meteor showers to observe, producing up to 60 meteors per hour at its peak. It is produced by comet Swift-Tuttle, which was discovered in 1862. The Perseids are famous for producing a large number of bright meteors. The shower runs annually from July 17 to August 24. It peaks this year on the night of August 12 and the morning of August 13. Unfortunately the nearly full moon this year will block out all but the brightest meteors. But the Perseids are so bright and numerous that it could still be a decent show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Perseus, but can appear anywhere in the sky.

**August 14 - Saturn at Opposition.** The ringed planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Saturn and its moons. A medium-sized or larger telescope will allow you to see Saturn's rings and a few of its brightest moons.

**August 27 - New Moon.** The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 08:17 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

**August 27 - Mercury at Greatest Eastern Elongation.** The planet Mercury reaches greatest eastern elongation of 27.3 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the evening sky. Look for the planet low in the western sky just after sunset.

Source:

<http://www.seasky.org/astronomy/astronomy-calendar-2022.html>

# August 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3 Board Meeting Garvey Night	4	5	6
7	8 General Meeting	9	10 Garvey Night	11	12	13
14	15	16	17 Garvey Night	18	19	20 Family Night
21	22	23	24 Garvey Night	25	26	27 Dark Sky Night 60 Inch Night
28	29	30	31 Garvey Night			

# Meet The New Members

## Welcome to the LAAS!



Carlos Martinez	Robert Crowder
Michael Jackson	Michelle Tritt
Juin Jung	Elizabeth Perser and Family
Morgan Harman	Michael Saing and Family
Brian Anderson	Mina Sharobim
Jonathon Coronol	Edwin Gould III and Family

## LAAS Board Meetings

.Due to the pandemic, all Board Meetings are now held online, live on Zoom. Please check the information posted in the IO Group Forum for any current news related to these meetings. If you wish to attend a board meeting, please send a request to [secretary@laas.org](mailto:secretary@laas.org) for a link to Zoom.

## Volunteer Opportunities

Every LAAS member is a volunteer at some point. Some members volunteer to share telescopes with the public, while others tackle administrative duties, help out at our community and public events, or join a club committee. Taking photos at our events and writing articles about events for our club newsletter are great ways to volunteer and become more involved in the LAAS as a member.

HOWEVER, due to Covid-19 restrictions in our area, all outreach events have been cancelled until further notice.

Volunteers are always welcome to write articles for our monthly newsletter or share images captured of the night sky. Members are also welcome to come up with new ideas and future activities for the membership which can be shared in Board meetings. If you are artistic and enjoy creating posters or flyers, or printable astro-educational handouts for further star parties, please let us know.

## Time To Renew Your Membership?

Please remember to renew your membership once you receive notice from the Club Secretary in your email inbox. The secretary will send you a link to a form created just for you for your renewal.

Please send any new contact information to the club secretary at [secretary@LAAS.org](mailto:secretary@LAAS.org).



## LAAS Outreach Program

The mission of LAAS is to promote interest in and advance the knowledge of astronomy, optics, telescope making and related subjects. In furtherance of its mission, LAAS conducts public star parties and other outreach events that are intended to enhance the public's understanding of astronomy and its enjoyment and appreciation of the beauty and wonders of our universe.



We provide outreach events at local schools, Griffith Observatory, Mt. Wilson Observatory, various state and county parks, and community events. Join our Outreach team of volunteers today. Contact Heven Renteria, our Outreach Coordinator at [Outreach@LAAS.org](mailto:Outreach@LAAS.org) for more information.



Want to include astronomy outreach at your school's science night or open house? Follow the link below to access the request form:

[https://nightsky.jpl.nasa.gov/club-eventrequest.cfm?Club\\_ID=1344](https://nightsky.jpl.nasa.gov/club-eventrequest.cfm?Club_ID=1344)

## LAAS Club Swag

**LAAS T-SHIRTS, HOODIES, MUGS, AND MORE!**


To find new merchandise from our store, please use the following link: <https://www.laas.org/store>

Please note all prices listed are subject to change and include all shipping and handling costs. All items will be shipped directly to the address you provide on your order form.



LAAS Hoodie



 Please remember all LAAS Outreach activities are postponed due to the Covid-19 pandemic.

## Amazon Smiles

The LAAS is now listed on Amazon Smiles. When you purchase any goods on Amazon.com, Amazon will donate a small percentage of the funds they receive from you, back to the LAAS. Here's some information to help bring in funds for our club projects:

What is AmazonSmile?

AmazonSmile is a simple and automatic way for you to support your favorite charitable organization every time you shop, at no cost to you, with the added bonus that Amazon will donate a portion of the purchase price to your favorite charitable organization., such as the LAAS!

Learn more by following this link:

<http://smile.amazon.com/>



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John O'Bryan, Jr.

## Astronomy Magazine Discounts

Discounts for astronomy magazines can be found on the internet. Look for the best deals possible. Send a copy of your LAAS membership card with your check or payment to receive a club member discount.

**Astronomy**  
magazine

As a member of the Night Sky Network, you may use the above link to renew your Astronomy Magazine subscription (or enter a new subscription) at the club discount rate. If this is a renewal, Astronomy Magazine will match your entered name and address and extend your subscription. For inquiries, please contact Astronomy Magazine customer service & sales at 1-800-533-6644.

[Click here to subscribe to Sky and Telescope Magazine.](#)



**Join the Astronomical Society of the Pacific** and help support the cause of advancing science literacy through engagement in astronomy. Member benefits include a **subscription to the online Mercury Magazine**, published quarterly, and **Astronomy Beat**, a monthly on-line column written by "insiders" from the worlds of astronomy research and outreach.

Subscribe or renew to the McDonald Observatory's StarDate Magazine and receive a special discount. Go to this page and press "Add to Cart" under the kind of subscription you want: <http://stardate.org/store/subscribe> Then, on the Checkout form, enter "network" in the Coupon Code box.





## Club Contact Information

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mtwilsoncoordinator@laas.org

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hurst.alecia@gmail.com

Treasurer: John O'Bryan, Jr.

treasurer@laas.org

Secretary: Spencer Soohoo

secretary@laas.org

Outreach Coordinator: Heven Renteria

outreach@laas.org

Club Communications: Andee Sherwood

communications@laas.org

Mt. Wilson Coordinator: Darrell Dooley

mtwilsoncoordinator@laas.org

Bulletin Editor: Andee Sherwood

communications@laas.org



Find astronomy outreach activities by visiting NASA's Night Sky Network:

<https://nightsky.jpl.nasa.gov/about.cfm>

## Club Contacts

### Club Phone Numbers

LAAS Message Phone:

213- 673-7355 (Checked daily)

Griffith Observatory:

213-473-0800

Sky Report:

213-473-0880



Follow us on social media by clicking on one of the icons below:

