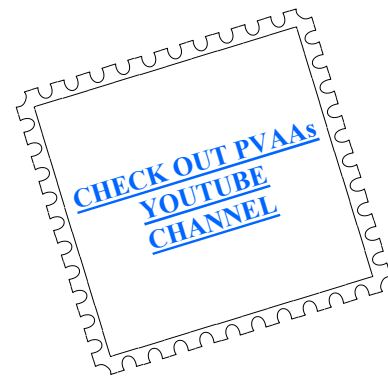




Newsletter of the Pomona Valley Amateur Astronomers

For many years I have been a night watchman of the Milky Way galaxy.

Bart Bok



Volume 43 Number 2

nightwatch

February 2023

Club Events Calendar

Feb 3 Virtual General Meeting – Dave Kary
 "The Strange Case of Kepler 1658B: A Doomed Planet,"
 Steve Sittig on laser propulsion systems for spacecraft
 and Mike Magras on Comet C/2022 E3 (ZFT)
 7:30 PM

Feb 18 Star Party – Anza Borrego

Mar 1 Board Meeting 6:15 PM
Mar 10 Virtual General Meeting 7:30 PM
Mar 25 Star Party – TBD
Mar 29 Board Meeting 6:15 PM

Apr 7 Virtual General Meeting 7:30 PM
Apr 22 Star Party–TBD
Apr 26 Board Meeting 6:15 PM

May 5 Virtual General Meeting 7:30 PM
May 20 Star Party – TBD
May 24 Board Meeting 6:15 PM

Jun 2 Virtual General Meeting 7:30 PM
Jun 17 Star Party – TBD
Jun 28 Board Meeting 6:15 PM

July 7 Virtual General Meeting 7:30 PM
July 15 Star Party – TBD
July 26 Board Meeting 6:15 PM

Aug 4 Virtual General Meeting 7:30 PM
Aug 19 Star Party – TBD

Sep 16 Star Party – TBD
Sep 20 Board Meeting
Sep 29 Virtual General Meeting 7:30 PM

Oct 14 Star Party – TBD
Oct 18 Board Meeting 6:15 PM
Oct 27 Virtual General Meeting 7:30 PM

Nov 8 Board Meeting 6:15 PM
Nov 17 Virtual General Meeting 7:30 PM
Nov 18 Star Party – TBD
Nov 29 Board Meeting 6:15 PM

Dec 9 Holiday Party

PVAA Officers and Board

Officers

President Mathew Wedel 909-767-9851
 Vice President .. Joe Hillberg 909-949-3650
 Secretary position is currently open
 Treasurer Gary Thompson 909-935-5509

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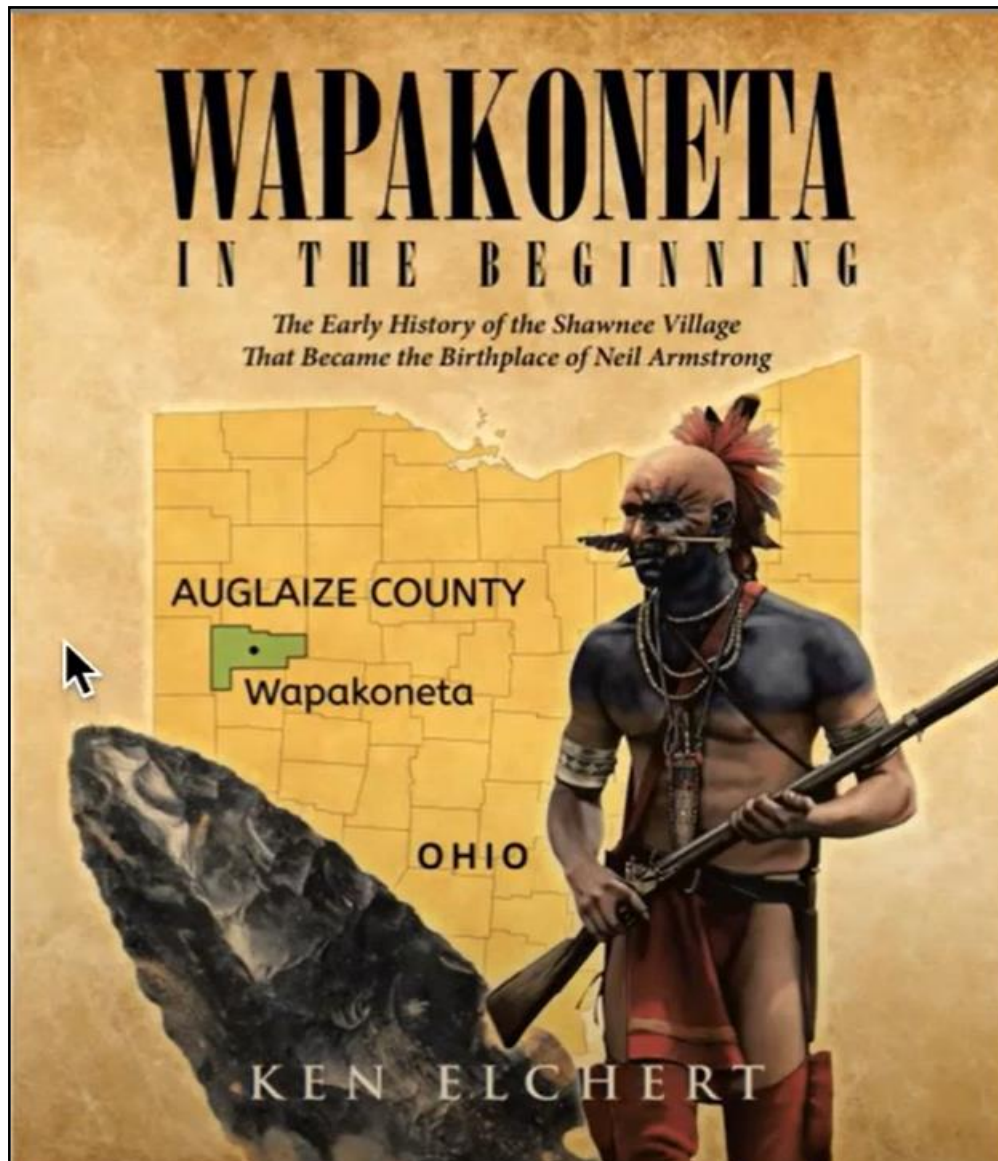
PVAA General Meeting 01/06/2023

Before our main speaker gave his presentation, Gary Thompson gave a little 5-minute preview on the upcoming space missions and rocket first flights for this year. Planned maiden flights: ESA's Ariane 6, JAXA's H3, Blue Origin's New Glenn, ABL Space System's RS1, SpaceX's Starship, Relativity Space's Terran 1, and United Launch Alliance's (ULA's) Vulcan Centaur.

Upcoming space missions of note are ISRO (Indian Space Research Organization) Chandrayaan-3 lunar lander and Aditya-1 solar observatory. ESA (European Space Agency) JUICE – Jupiter Icy Moons Explorer and the next Mercury flyby of its BepiColombo spacecraft on June 20th. Launch of NASA's Psyche Mission and return of the OSIRIS-Rex spacecraft with a sample of the 101955 Bennu asteroid on September 24th. The Polaris Dawn mission – privately crewed Dragon spacecraft to new orbital record height, and first commercial spacewalk. Boeing's first crewed mission to the ISS. Axiom Space commercial crew to ISS using a Dragon spacecraft. We will have a busy year of firsts this year.

Ken Elchert was the main speaker for the night. His subject was his newly published book 'Wapakoneta In The Beginning'. This is the birthplace of Neil Armstrong – first person to walk on the moon. Ken starts out with a map of Ohio, showing where Wapakoneta is located. He then shows a local map and gives an Armstrong fact that Neil got his pilot's license before he got his driver's license. He had to pedal his way to the Port Koneta Airport on his bike, and then go flying. This airport was little more than a clear field and is no longer in existence. It has been replaced by Auglaize County Neil Armstrong Airport (AXV).

The Shawnee Indians were the dominant population of the area, coming in from Pennsylvania. Wapakoneta has been spelled in over 50 different ways. This is due to the fact that the Shawnee did not have a written language and everything was phonetic.





Neil Armstrong's birthplace

When it was put into written languages, it depended on the person's phonetic spelling. Shawnee Chief Black Hoof went to Washington and proposed Shawnee land boundaries to President Thomas Jefferson. Jefferson deferred the matter over to the Department of War. Later Black Hoof proposed a smaller amount of land, but this was strung out over many years and many treaties. Neil Armstrong's Great-Great-Great-Grandfather John S Armstrong's signature was on one of the treaties. Ken then showed a map of the Shawnee, Ottawa, Wyandot, Seneca, and Delaware Indian reservations in the area. Ken shared a picture he took of the old Port Koneta location

Picture by Ken Elchert

Gary Thompson

Salton Sea January Star Party

The Salton Sea was the location of our January Star Party. The Boy Scout Troop 888 from Covina, California was camping out. We looked at Venus, Saturn and its rings, Jupiter and 4 of its moons, Mars, the Orion Nebula, and the Andromeda Galaxy. We all had a good time.

Gary Thompson

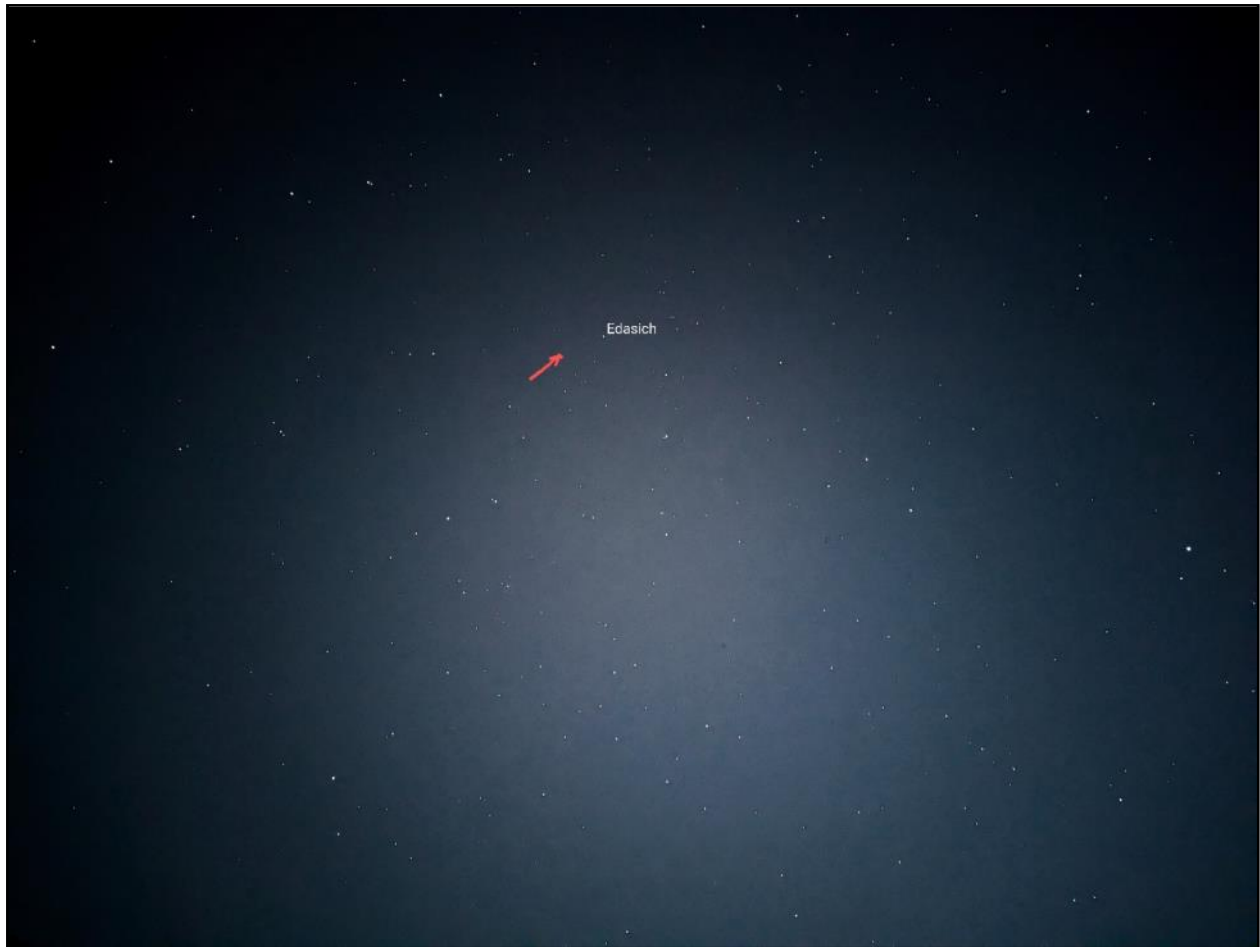
Comet Report

Report From Sun Jan 22

I took a first look this morning at 0505 MST from my home in Arizona. Found it easily with 10x42 binoculars, green glowing coma with stubby fat tail about as long as the diameter of the coma. Around 6th magnitude? About 60 up in the NNE.

Report from Tues 24 Jan:

From Upland CA at 0510 PST, found it easily lower left of Draco's star Edasich with Canon 10x42 IS binoculars in bright urban sky. Decided to drive up to Mt Baldy Village and possibly Cow Canyon Saddle; arrived top of village about 0535, better binocular view of comet from there. Gate to road to saddle was locked so walked about ½ way up to Cow Canyon Saddle and was able to see it naked eye (barely) with sky now just starting to brighten from dawn, about 0545-0550. Short tail extending left of the nucleus was visible, with possibly some anti-tail pointing sunward. Took photos with cell phone, a couple of which succeeded in capturing an image of the comet; one attached.



C/2022 E3 (ZFT) taken 1/24/23

Report from Friday 27 Jan:

From home at 2115 MST, easily found with 10x42 over light dome of Tucson upper right of Kochab, the β star in U Minor. Tail obvious now and growing. Just visible naked eye even with nearly first quarter Moon halfway up western sky. Mag 4.5 - 5?



C/2022 E3 (ZFT) taken 1/28/23

Mike Magras

Astronomy Grab Bag

Happy New Year to everyone! After being out of town for both of the past two new moons, we were looking forward to camping January 20 and 21; A couple of weeks of rain didn't make the outing look promising but it fortunately cleared just in time. The weather prediction was reasonably accurate – it was clear and very cold, at least for me. Sunday at 5:00 am the temperature was between 17 and 21F. Frost covered everything.



The first image is actually from December 14 when we were in Hawaii. One advantage of the sky tracker I bought in September is that it is reasonably portable. I carried it with me and on a couple of evenings, set it up and took some pictures. The tail-end of the summer Milky Way was setting in the early evening and there was a nice tree in the foreground. I set up to take 163 30-second frames with a Canon EOS 80D and stacked them using Sequator software. Total integration time is just under an hour and a half. Camera settings were 35mm focal length, ISO 6400, and $f/8$. Sequator allows me to indicate which part of the frame is foreground and which is sky. The moving sky in the images gets averaged while the foreground remains static. Final processing was done in Photoshop. In the final image, the Milky Way can be seen reaching from about the center of the frame to the upper right corner. The bright star to the right of the tree is Deneb in Cygnus.



The second image is another sky tracker image taken January 21 at the dark site. I'm still learning to aim it, so big objects are my best targets at this point. The target is the Orion constellation which hopefully everyone is familiar with. Since Orion lies in the plane of the Milky Way from our Earth viewpoint, there are a lot of small, indistinguishable stars creating star clouds in the image. Settings on the Canon were 35mm focal length, ISO 1600, and $f/5.6$. Settings on the camera still need a little adjustment because the stars in the corners are triangular instead of round. The image is a stack of 4 hours of 1-minute frames averaged in Deep Sky Stacker and processed using PixInsight and Photoshop. One downside of using the Canon is that the IR filter covering the sensor cuts out a great deal of the red from glowing hydrogen, so much of the nice red of nebulae is missing.

In the image, north is toward the left side and Orion's Belt is in the center of the picture. The yellow star toward the bottom left is Betelgeuse and the blue/white star toward the upper right is Rigel. Look close at the lower belt star, Alnitak, and you can see the orangish Flame Nebula and the red background that highlights the dark Horsehead Nebula. To the right of the belt stars is Orion's Sword, a short line of "stars". However, in this image, it is clear that much of the sword does not consist of stars, but nebulae. The large nebula is M42, the Great Orion Nebula, a rich star-forming region. Just to the left of the Orion Nebula is the Running Man Nebula, so called because of the shape of the dark lanes within it. To the left and below Alnitak is a dark region with two small reflection nebulae in it, M78, and just a little further away is a large reddish arc that is part of Barnard's Loop. Betelgeuse and Bellatrix, the bright star above Betelgeuse, form Orion's shoulders and his head is the small triangle of stars to the left. Centered on this triangle is a very large, faint, red nebula that reaches almost to the shoulders. Finally, about mid-way between Rigel and the top edge of the image is a pale gray reflection nebula that can just barely be seen. This is the Witch Head Nebula.



The final image for this month is a closer view of one of two interacting galaxies in an image I shot nearly 6 years ago. The target is M82, the Cigar Galaxy, while its interacting companion, M81, Bode's Galaxy, is off screen below the edge of the image. Look carefully and you can see that M82 is slightly S-shaped from the interaction. Located in Ursa Major and classified as a starburst galaxy, it has a rate of star formation 10x higher than a typical galaxy, also due to the interaction with M81. The high rate of star formation cause plumes of glowing hydrogen gas to stream out from the center of the galaxy giving it a very unusual structure. M81 is about 11-12 million light years away making it a fairly close galaxy that is visible through binoculars.

The image of M82 is a combination of frames taken through luminance, hydrogen alpha, red, green, and blue filters over the nights of January 20 and 21. Red and hydrogen alpha frames, 28 3-minute and 25 10-minute, respectively, were combined to make an enhanced red frame. The enhanced red frame was then combined with 29 3-minute green and blue frames to create a color layer. I also combined the hydrogen alpha frames with 117 5-minute luminance frames to create a detail layer. The color and detail layers were processed separately in PixInsight then combined to produce the final image. A few final processing steps in Photoshop to bring out details were the last steps. I feel the final result is much better than my last attempt, especially in highlighting the hydrogen plumes.

I hope you enjoy the images. Until next month, clear skies!

Ron Ugolick

<https://www.astrobin.com/users/rucedu/>

Another Look - January 2023

New Moon-February 20, Full Moon-February 5

February 5 will mark the Lunar New Year for many cultures, celebrated in their own particular way. Since it signifies renewal, the February new moon is called by some the "House of the Burning Moon" and the "Budding Moon."

South-Western Native Americans called it the "Moon of Purification and Renewal". Other Native Americans call it the Snow Moon or Bone Moon while it's the Celtic Moon of Ice. Our modern name is Snow Moon

Transiting the meridian and near the zenith in the evening hours in February and March when the weather is changing from frigid to merely cold, it is no wonder that herdsmen from the fertile crescent to Scandinavia north identified Castor and Pollux as harbingers of spring, when herds grew and grain sprouted.

Instead of twin brothers, however, the ancients imagined these stars represented two Kids. There was a significance in this title quite apart from its relation to the herds that they were daily concerned with. We see in this region of the sky three ancient and important constellations named after domestic animals that figured prominently in the pastoral life of early times, the Ram, the Bull, and the Kids. Plutarch tells us that "in the reproduction of species among the herds familiar to primitive man, the first produced in the vernal season are the lambs, then come the calves, and later the kids, so that it was natural that the ancients who devised the constellations should characterise(sic) in this order the three constellations through which the sun passed in the vernal season.

"Star Lore of All Ages" Olcott

The two stars are almost universally identified as twins throughout our western culture though seen differently from Egypt to Polynesia and Australia.

To the Australian aborigine they were two young men chasing the young women of the Pleiades. the Arabs saw two peacocks, the Egyptians two sprouting plants, and the Hindus twin deities, while in the Buddhist zodiac they represented a woman holding a golden cord and the Polynesian Islanders a pair of twins. It is also interesting to learn that the Bushmen of South Africa identified the two stars as young women, the wives of the Eland, their great antelope and the Gemini were the Ape of the early Chinese solar zodiac. Later on, in China, the constellation was known as the Yin/Yang, two principals familiar to us today.

What this tells us is that for thousands of years cultures have identified the stars of Gemini with the position and path of the sun, moon, planets and their location against the stars signifying special times of the year. We are told that on the Babylonian monuments and boundary stones, the oldest we have, there is a set of symbols repeated over and over again, and always given a position of



prominence. It is the so-called "Triad of Stars," a crescent lying on its back and two stars near it.

The significance is that four thousand years BC, Castor and Pollux served as indicators of the first new moon of the year, just as the star Capella did two thousand years later. This Triad of the moon and two stars is a picture of what men saw in the sunset sky, at the beginning of the first month 6000 years ago.



*The Triad of Stars
From a Babylonian Boundary Stone
Approximate date 1200 B.C.*

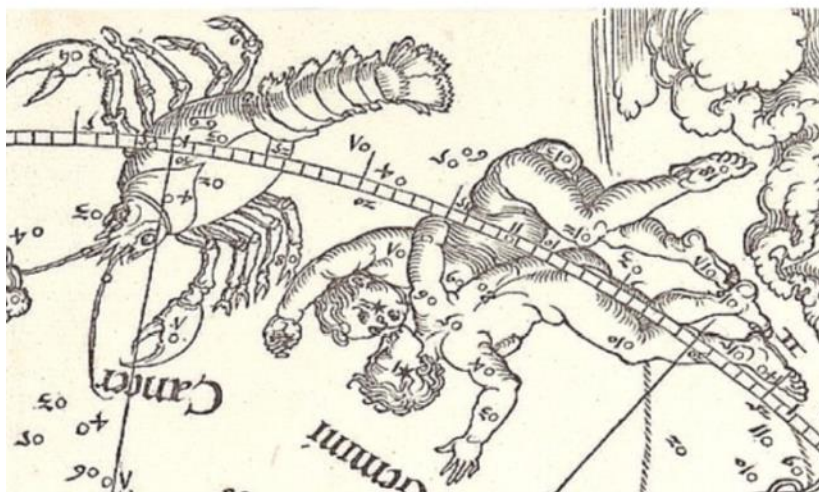
It is the earliest record of an astronomical event that has made its way to us.

The name Gemini as we know it has only been such since classical times. It comes from the Latin *geminī*, plural of *geminus*, meaning "twin." The Greeks and the Romans know them as Castor and Pollux, twin brothers of different fathers, hatched from an egg, one immortal and one not. Still, I don't think the name Gemini actually was used till the 13th century when the first charts were drawn and globes constructed.



I have never been all that interested in Castor and Pollux. I see them as a pair of bullies always looking for a fight. The Romans saw them leading their armies in battle and the Greeks saw them as crew on the Argos in its search for the golden fleece.

*Safe comes the ship to Haven
Through billows and through gales,
If once the great Twin Brethren
Set shining on the sails. Macaulay.*



Public Domain

<https://www.metmuseum.org/art/collection/search/358366>

Albrecht Dürer | The Celestial Map- Northern Hemisphere 1515

The twins are also the first reference we have to the atmospheric phenomenon known today as St. Elmo's fire; an electrical glow off the tips of masts and spars on our old wooden sailing ships. During the three years I spent at sea I never saw it personally but a report taken from one of the survivors of Magellan's circumnavigation describes the fire of the twins during its passage through the strait.

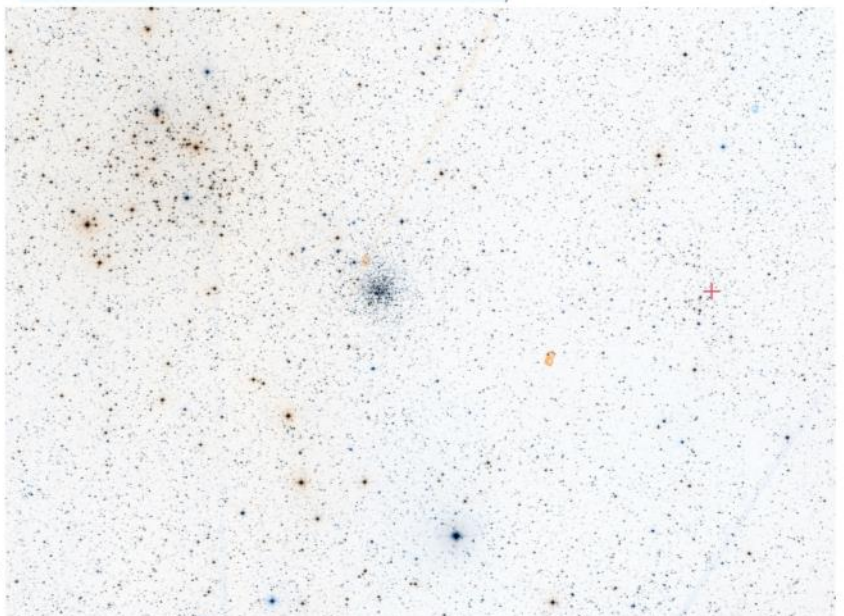
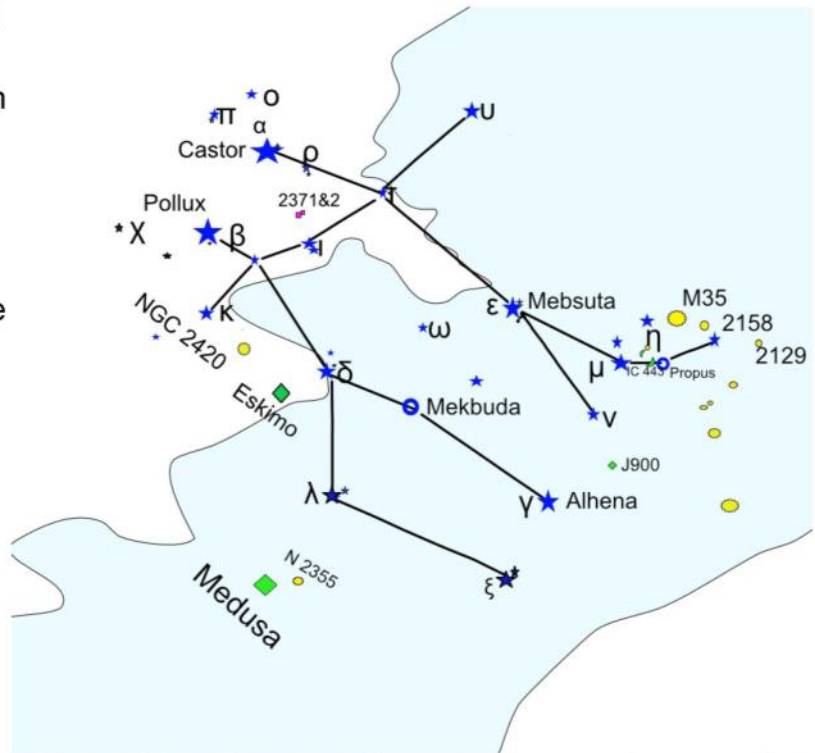
*Last night saw Saint Elmo's stars,
With their glittering lanterns all at play
On the tops of the masts and the tips of the spars,
And knew we should have foul weather to-day.
Longfellow's "Golden Legend of the Padrone"*

No less a luminary as Herschel named Castor, α Geminorum, as the "finest example of a double star in the northern hemisphere". Smyth in the "Bedford Catalog" gives it three pages, Webb a long description and Houston rhapsodized over its companions noticeable change in position angle. We still use Castor as a primary star, using a Sextent, in Celestial navigation.

Physically, Castor is a sextuplet, three visible stars and each with its own spectroscopic binary. The three visible components are essentially 2, 3 and 10th magnitudes and can be split in a three inch refractor, though I am pretty sure I never looked for C. While up there check out 5th magnitude pi π , it has an 11th magnitude companion.

While we are speaking about superlatives, at the foot of Castor is M35, one of our finest examples of an open cluster. NGC 2158 is next to M35 and NGC 2159, marked by a cross. IC 2157 is next to N2129 and difficult.

Dripping down from the foot of Castor like icicles on a fir tree is a line of star clusters and objects curving into and out of Gemini. All are visible in your telescope. The one that struck me was



a difficult planetary Scotty mentioned in his column. Jonckheere 900 also known as PK 194+2.1 and J900, is a planetary nebula that will be a tough find at 12th mag. In the area, just over the border into Orion is NGC 2174-5, the Monkey Head. I mention it because local astrophotographer Rick Gonzalez took this amazing image.



NGC 2174-5 Rick "Speedy" Gonzalez

If by now, you are asking "why so many open clusters?", remind yourself that we are still in the Milky Way and clusters and nebula permeate, we are not done yet, we have a few more doozys.

NGC 2420 is up by the Eskimo so you can use it as a

starting off point for star hopping. N2420 will come up on you quickly as a dense misty patch but will resolve nicely to your telescopes limit. It's 8th magnitude and interestingly right on the ecliptic. Another interesting open cluster is over by the Medusa, NGC 2355. Its nice, a few bright stars, a few red ones and easy to pick out from the background. N2355 is 10th magnitude and 10 arcmin across.



[https://en.wikipedia.org/wiki/NGC_2355#/media/File:NGC2355_-_SDSS_DR14_\(panorama\).jpg](https://en.wikipedia.org/wiki/NGC_2355#/media/File:NGC2355_-_SDSS_DR14_(panorama).jpg)

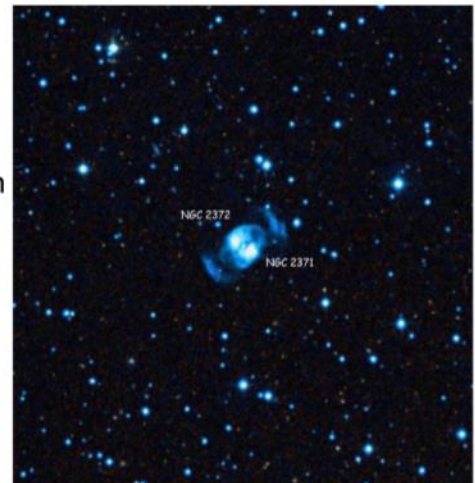
<https://simbad.u-strasbg.fr/simbad/sim-id?Ident=NGC+2420Up>

On the other side of Gemini, making the top of the spindle with ι, ρ and τ is the Gemini double planetary. It's small and only 11th magnitude but visible in your 8".

NGC Catalog #2371



I did some comparisons. Tycho is 45 arcmins. Picture him in your telescope. The Gemini double, NGC 2371 and 2372, are .73 arcmins. Use an OIII filter if you have one. Modern images show a lobed shape, though different telescopes



can show different images, the double NGC designation comes from the reports Draper got after it was found. The Herschel's reported two nebula with a dark lane between them, hence the two number designation. There are magnitude differences based on the authority, but the NGC catalog lists 11.2, so I'm sticking to it until I find two sources that agree on the same number. \$

There are three amazing deep sky wonders in Gemini that are almost certainly on every amateurs to-do list.

The first is the Eskimo Nebula, NGC 2392, Caldwell 39, and also known familiarly as the Clown Face. Some years back my club had a Monday evening at Griffith Observatory's beautiful 12" Zeiss refractor. The image of the nebula was nothing short of amazing. So is its size. By comparison, NGC 2392 is just a smidge smaller than Copernicus in your eyepiece.

The Medusa Nebula is a little off by itself closer to Canis Minor and not too far from NGC 2395, an open star cluster of 8th magnitude. The Medusa, also Abell 21, is a lot fainter, about 16th magnitude, though, from the attached image I grabbed from Simbad, they are of



<https://simbad.cds.unistra.fr/simbad/simid?ident=ngc+2395&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id>

<https://ocastronomers.org/wp-content/uploads/2018/12/IC443-102608-HaRGB-S.jpg> John Castillo

Back in the late 80's while writing for a local astronomy club, I offered a challenge to find a supernova remnant near the foot of Castor. Fast forward 40 years and IC 444 and IC 443 are easy pickings for our stellar astrophotographers. It will still be a challenge



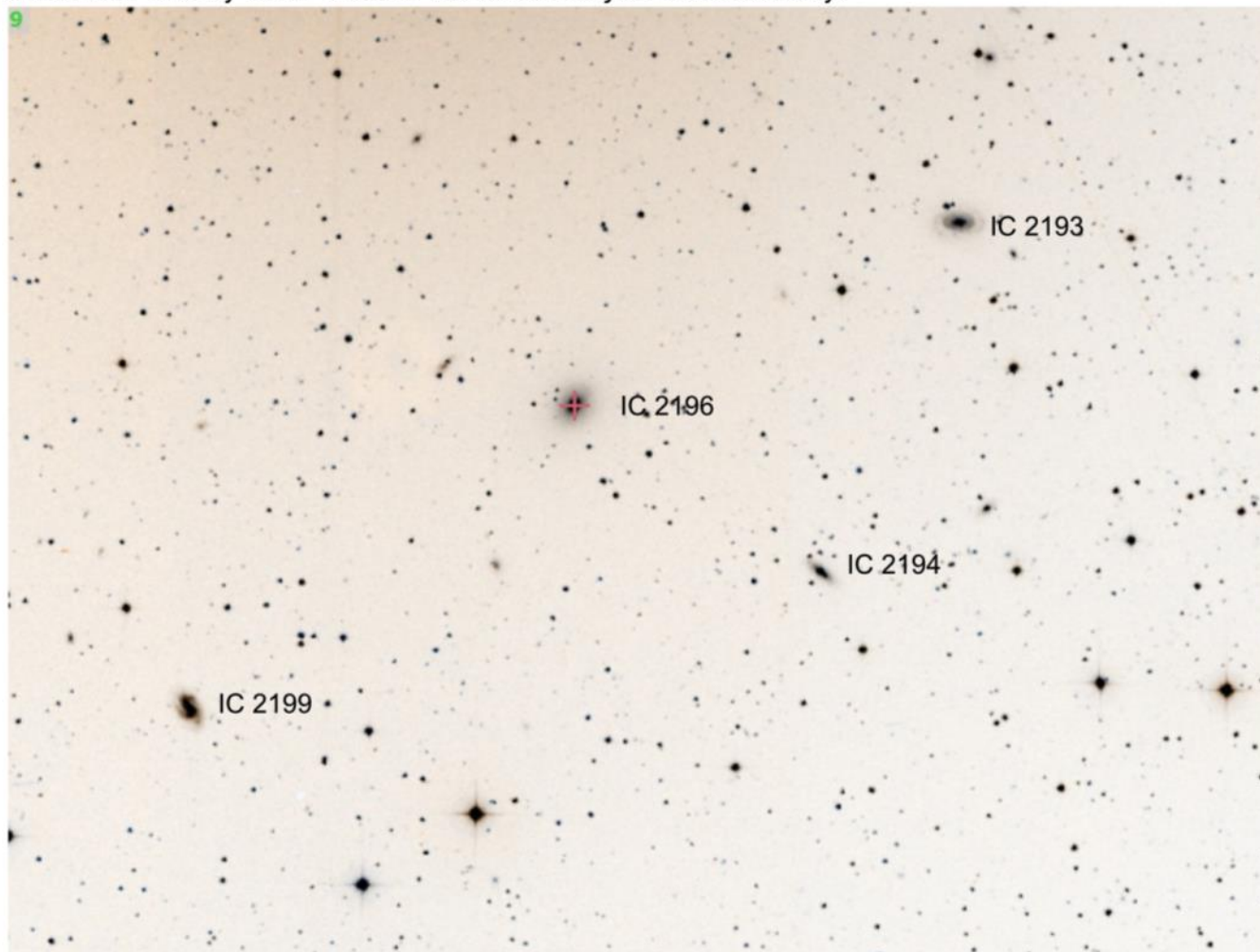
about the same angular dimensions, 14x14 arcmin, though maybe the Medusa is a little closer to 10 arcmin, about a third the size of the full moon.

visually, however. I could see the bright rim in the 17" and even trace some of the nebulosity that extends from I443 to I444.

Its down there by Propus, η Geminorum and is in a very rich field of objects, next to Collinder 89, M35 and NGC 2128 as well as η and μ . H ζ proper name is Tejat Prior and also Propus. Propus is a triple star system but probably more famously the planet nearest Uranus when it was discovered by Herschel. M ζ proper name is Tejat Posterior, meaning the Heel.

You can put Mu and Eta in the same field and see the extent of IC's 443 and 444, but I don't know how much you can capture with your eye. Its bright enough at 11th magnitude but so spread out its hard to see. I used a H α back then, you will do better.

You can find images all over the internet of the nebula, the OCA website has a dozen, but I chose this one by John Castillo because it is just extraordinary.



<https://simbad.cds.unistra.fr/simbad/sim-id?ident=ic+2196&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id>

The last five objects this month were described by Scott Houston in his "Deep Sky Wonders" column he wrote for over 40 years for Sky and Telescope magazine. Near Castor about a degree north is NGC 2410 a 13th magnitude spiral galaxy that was discovered, cataloged and rediscovered several times.

The other four are NGC's 2193, 2194, 2196 and 2199. Just below Castor, you can see the glow of him in the image. They are all 12th and 13th magnitude galaxies that Scotty thought might rival Stephan's Quintet. I think you'll get'em with your 12.5" and good, dark skies.

Dark Skys Dave Phelps



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 to find local clubs, events, and more!

Spot the King of Planets: Observe Jupiter

David Prosper

Jupiter is our solar system's undisputed king of the planets! Jupiter is bright and easy to spot from our vantage point on Earth, helped by its massive size and banded, reflective cloud tops. Jupiter even possesses moons the size of planets: Ganymede, its largest, is bigger than the planet Mercury. What's more, you can easily observe Jupiter and its moons with a modest instrument, just like Galileo did over 400 years ago.

Jupiter's position as our solar system's largest planet is truly earned; you could fit 11 Earths along Jupiter's diameter, and in case you were looking to fill up Jupiter with some Earth-size marbles, you would need over 1300 Earths to fill it up – and that would still not be quite enough! However, despite its awesome size, Jupiter's true rule over the outer solar system comes from its enormous mass. If you took all of the planets in our solar system and put them together they would still only be half as massive as Jupiter all by itself. Jupiter's mighty mass has shaped the orbits of countless comets and asteroids. Its gravity can fling these tiny objects towards our inner solar system and also draw them into itself, as famously observed in 1994 when Comet Shoemaker-Levy 9, drawn towards Jupiter in previous orbits, smashed into the gas giant's atmosphere. Its multiple fragments slammed into Jupiter's cloud tops with such violence that the fireballs and dark impact spots were not only seen by NASA's orbiting Galileo probe, but also observers back on Earth!

Jupiter is easy to observe at night with our unaided eyes, as well-documented by the ancient astronomers who carefully recorded its slow movements from night to night. It can be one of the brightest objects in our nighttime skies, bested only by the Moon, Venus, and occasionally Mars, when the red planet is at opposition. That's impressive for a planet that, at its closest to Earth, is still over 365 million miles (587 million km) away. It's even more impressive that the giant world remains very bright to Earthbound observers at its furthest distance: 600 million miles (968 million km)! While the King of Planets has a coterie of around 75 known moons, only the four large moons that Galileo originally observed in 1610 – Io, Europa, Ganymede, and Callisto – can be easily observed by Earth-based observers with very modest equipment. These are called, appropriately enough, the *Galilean moons*. Most telescopes will show the moons as faint star-like objects neatly lined up close to bright Jupiter. Most binoculars will show at least one or two moons orbiting the planet. Small telescopes will show all four of the Galilean moons if they are all visible, but sometimes they can pass behind or in front of Jupiter, or even each other. Telescopes will also show details like Jupiter's cloud bands and, if powerful enough, large storms like its famous Great Red Spot, and the shadows of the Galilean moons passing between the Sun and Jupiter. Sketching the positions of Jupiter's moons during the course of an evening - and night to night – can be a rewarding project! You can download an activity guide from the Astronomical Society of the Pacific at bit.ly/drawjupitermoons

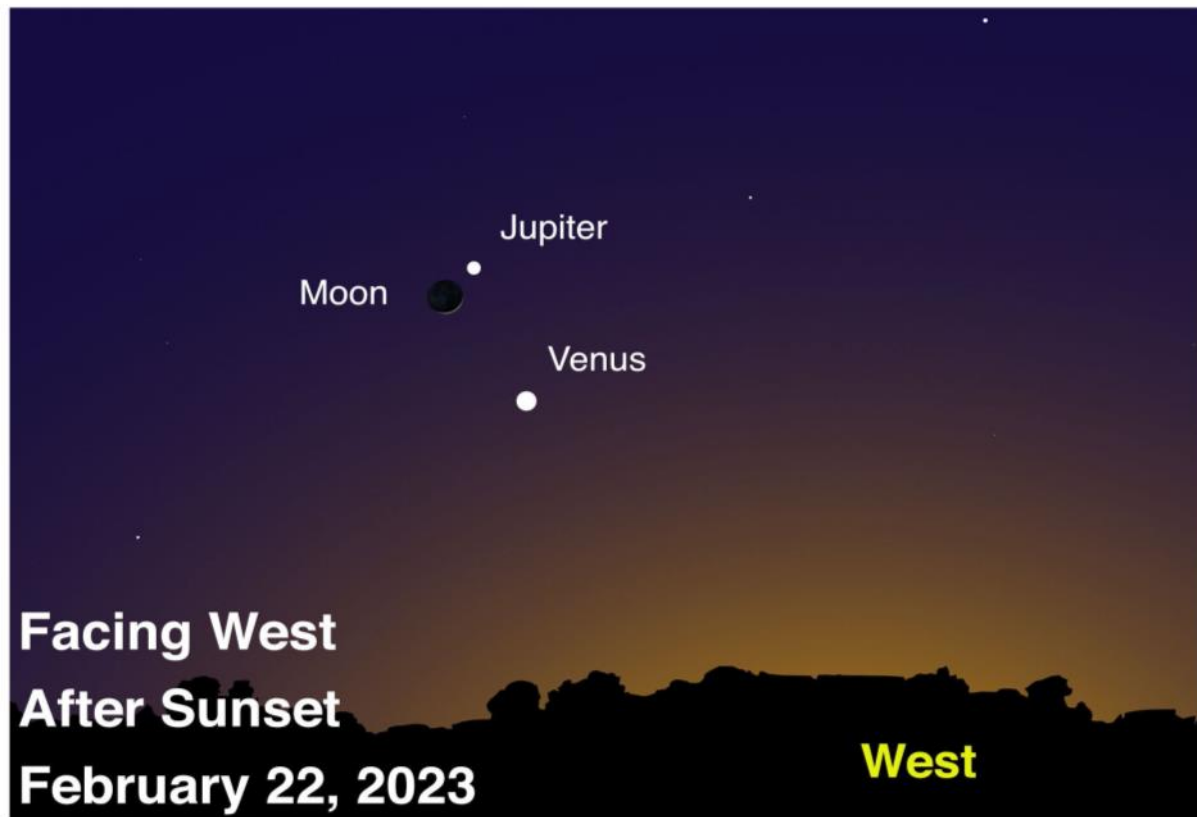
NASA's Juno mission currently orbits Jupiter, one of just nine spacecraft to have visited this awesome world. Juno entered Jupiter's orbit in 2016 to begin its initial mission to study this giant world's mysterious interior. The years have proven Juno's mission a success, with data from the probe revolutionizing our understanding of this gassy world's guts. Juno's mission has since been extended to include the study of its large moons, and since 2021 the plucky probe, increasingly battered by Jupiter's powerful radiation belts, has made close flybys of the icy moons Ganymede and Europa, along with volcanic Io. In 2024 NASA will launch the Europa Clipper mission to study this world and its potential to host life inside its deep subsurface oceans in much more detail. Find the latest discoveries from Juno and NASA's missions at nasa.gov.



This stunning image of Jupiter's cloud tops was taken by NASA's Juno mission and processed by Kevin M. Gill. You too can create amazing images like this, all with publicly available data from Juno. Go to missionjuno.swri.edu/junocam to begin your image procession journey – and get creative!

Full Image Credit: NASA/JPL-Caltech/SwRI/MSSS; Processing: Kevin M. Gill, license: CC BY 2.0)

<https://creativecommons.org/licenses/by/2.0/> Source: <https://apod.nasa.gov/apod/ap201123.html>



Look for Jupiter as it forms one of the points of a celestial triangle, along with Venus and a very thin crescent Moon, the evening of February 22, 2023. This trio consists of the brightest objects in the sky – until the Sun rises! Binoculars may help you spot Jupiter's moons as small bright star-like objects on either side of the planet. A small telescope will show them easily, along with Jupiter's famed cloud bands. How many can you count? Keep watching Jupiter and Venus as the two planets will continue to get closer together each night until they form a close conjunction the night of March 1. Image created with assistance from Stellarium.