



Newsletter of the Pomona Valley Amateur Astronomers

Wisdom is knowing how much I don't know

Socrates



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nightwatch

December 2021

Comet Leonard

In case you need inspiration to encourage you to track down C/2021 A1 (Leonard), our latest (hopefully) bright comet, here are some photos taken by Mike Magras who is a member of the Tucson Amateur Astronomy Association and has joined some of

us at the Grand Canyon Star Party. The comet is just now transitioning from an early morning to a late-night object so you no longer have being unable to rise early as an excuse – though rainy skies and clouds can still get in our way.



Mike lives outside of Tucson and was first able to see the comet on November 30 with 10x42 binoculars at 60 degrees elevation. These photos were taken on December 2 - single exposures, 15 sec, ISO 3200, 700mm FL, f/2 (Edge 14 HyperStar) using a Canon 6D camera.

The comet is currently moving into evening sky and will be nearby Venus and Pluto around the 16th - 18th.

There are some reports online this past week of naked eye sightings from dark sites at around mag 6 and it might get brighter as it closes on perihelion Jan 3, 2022.

Here is a link to helpful information on viewing and photography:

<https://www.youtube.com/watch?app=desktop&v=J9Dji1rRoyw>

Claire Stover and Mike Magras



Flaming Star Nebula

.New moon was November 3 at nearly midnight here in Southern Cal. That means it was about as dark as it can get for the entire weekend. Due to a hectic schedule, I didn't get to set up for practice before heading out, so I was worried I had forgotten something. Fortunately, I packed everything I needed. A second worry was that our usual campsite had been scooped out from under us. The camp host told me it was a group of 16

persons, so while we had reserved the site across the street, a huge "party" was expected with lots of noise and lights. It turns out it was a scout group! They were actually very quiet and considerate when one of our group asked if they could keep the lights from shining into our area. We even demonstrated our equipment for them one night. Boy, do they ask a lot of questions!!!



The target for the month was the Flaming Star Nebula, which I first imaged about 5 years ago. It was taken with a very long focal length (1500 mm, meaning very zoomed in) and my old one-shot color camera. I really didn't like the color so I had hoped to image it again at some point. I was finally able to do so. The Flaming Star is primarily a large, bright emission nebula but it has some reflection areas toward the brightest star giving a smoky appearance. The nebula is located about 1,500 light years away in the constellation Auriga, the charioteer. While it is about 5 light years across, it spans an area about the diameter of the moon on it's longest edge. Interestingly, it shines at a magnitude of about 6 and I was actually able to see it naked eye.

Both Friday and Saturday nights were clear and I was able to run virtually identical imaging sessions each night. Friday I took 15 shots through the red filter, 14 shots through the green and blue filters, and 151 shots through the luminance (clear) filter. Saturday I took 16 shots through the red, green, and blue filters and 150 shots through the luminance. All frames collected

through the color filters were 5-minute exposures while the frames through the luminance filter were 2-minute exposures for a total of 2 hours 35 minutes in red, 2 hours 30 minutes in green and blue, and 10 hours and 2 minutes in luminance. I made a slight error during acquisition and accidentally binned all the frames 2x2, resulting in undersampling. The individual sets of images were stacked in DeepSkyStacker with drizzle applied (fortunately I dithered, or slightly moved the frame after each exposure) to recover most of the detail lost due to undersampling. The stacked color frames were combined into an RGB image then after a little linear stretching, it and the stacked, stretched luminance image were processed with Starnet++ to remove the stars. Final stretching was done on the starless images before the stars were added back. Then the luminance layer was applied to the RGB image for the final picture. This time it certainly turned out better than the previous version which just looked dull. I hope you agree.

Ron Ugolick

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

PVAA Christmas Party

On Friday, December 10th we had PVAA's Christmas party at Casa Jimenez in Claremont. A new member joined us, Steve King. Welcome, Steve – we're glad to have you!

The food and service were great. I brought my 8" Dob and we looked at the moon and Jupiter. (The restaurant's parking lot is WELL lit.)

Attached is a picture I took of the moon with my LG smartphone.

A few other restaurant patrons viewed Jupiter and took pictures of the moon. We had eight people at our Christmas party.

Gary Thompson



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President Mathew Wedel 909-767-9851
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 Programs Ron Hoekwater 909-391-1943

Club Events Calendar

| | | | |
|---------------|--|---------------|--|
| Jan 5 | Board Meeting – Coco’s 6:15 PM | Mar 18 | General Meeting - (presentation: TBD) |
| Jan 14 | General Meeting - (presentation: TBD) | Apr 15 | General Meeting - (presentation: TBD) |
| Feb 18 | General Meeting - (presentation: TBD) | | |

Antikythera Mechanism

A well-done video was found on research into the Antikythera Mechanism. Back in August 2020 we heard a lecture about the Mechanism from Ken Elchert and this is a good refresher.

<https://www.youtube.com/watch?v=Q124C7W0WYA>

Keep in Touch

Many of you may remember Club Members Ray Magdziarz and Lee Collins. Both were long term members, involved with keeping the Club going by being on the board and helping with many presentations and essential duties over the years – like providing coffee at our monthly meetings!

While Ray passed away last year, his wife Irene was also a frequent attendee at our Club meetings and made sure coffee and cookies were available for all.

As many of us break out old-style pens, paper, and stamps to send holiday cards again this December, I thought I’d share how you can reach out to these two PVAA friends. I’m sure they’d love to hear from you so please drop them a line to say “hello” during the holiday season or beyond.

They can be found at:

Lee Collins
 Claremont Place
 120 W San Jose Ave
 Claremont, Ca 91711

Irene Magdziarz
 Claremont Manor
 650 Harrison Ave
 Claremont Ca 91711

**This article is distributed by NASA Night Sky Network**

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Hunting the Hunter: Observing Orion

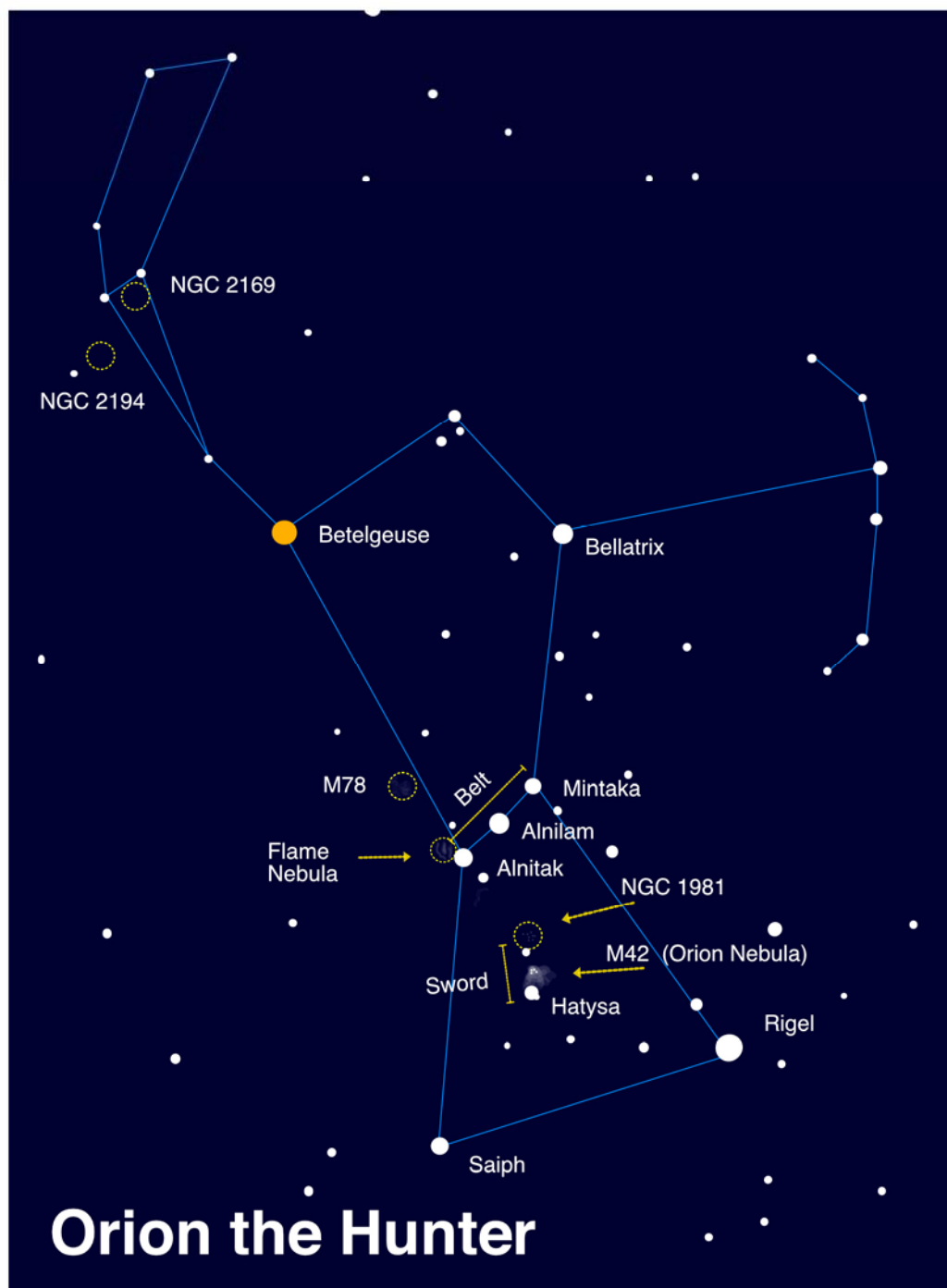
David Prosper

If you are outside on a clear January night, it's hard not to notice one distinctive star pattern above all: **Orion!** While we've covered Orion in earlier articles, we've never discussed observing the constellation as a whole. Perhaps you've received a new telescope, camera, or binoculars, and are eager to test it out. Orion, being large, prominent, and full of interesting, bright objects, is a perfect constellation to test out your new equipment and practice your observing skills - for beginners and seasoned stargazers alike.

In Greek mythology, Orion is a strong hunter, with numerous legends about his adventures. Being such a striking group of stars, cultures from all around the world have many myths about this star pattern. There are so many that we can't list them all here, but you can find a wonderful interactive chart detailing many cultures' legends on the Figures in the Sky website at figuresinthesky.visualcinnamon.com.

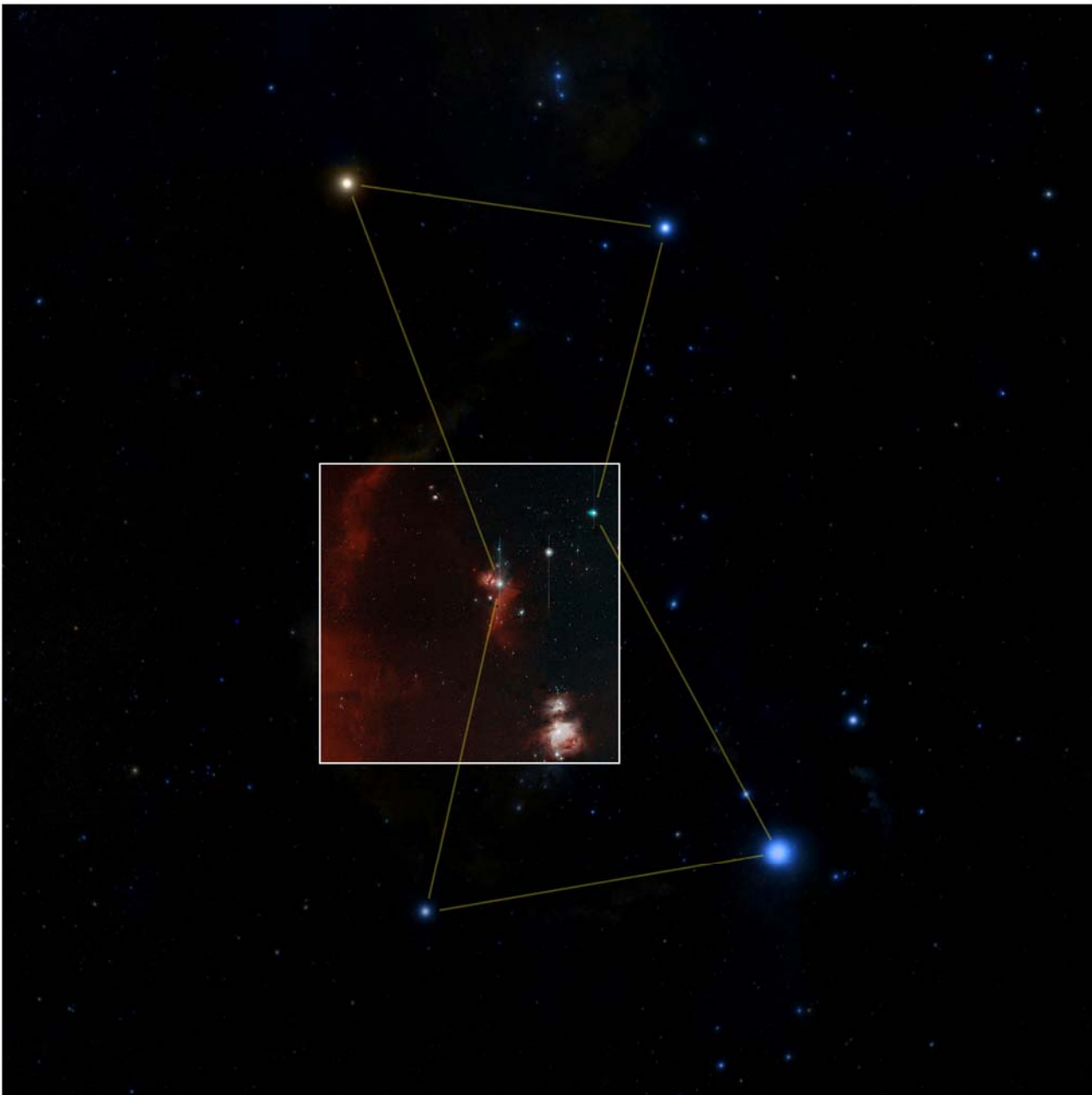
What sights can you see in Orion? Look above the variable orange-red supergiant "shoulder star" Betelgeuse to find the stars making up Orion's "club," then move across from Betelgeuse towards the bright star Bellatrix (Orion's other "shoulder") and the stars of his bow and arrow - both essential tools for the Hunter. Many interesting sights lie near Orion's "belt" and "sword." Orion's belt is made up of three bright giant stars forming an evenly spaced line: Alnitak, Alnilam, and Mintaka. Move from the belt stars towards the stars Rigel and Saiph (Orion's "feet" or "knees") to arrive at Orion's distinctive Sword, parts of which may appear fuzzy to your unaided eyes. Binoculars reveal that fuzz to be the famed Orion Nebula (M42), perched right next to the star Hatysa! Diving in deeper with a telescope will show star clusters and more cloud detail around the Nebula, and additional magnification brings out further detail inside the nebula itself, including the "baby stars" of the Trapezium and the next-door neighbor nebula M43. Want to dive deeper? Dark skies and a telescope will help to bring out the reflection nebula M78, the Flame Nebula (NGC 2024), along with many star clusters and traces of dark nebula throughout the constellation. Very careful observers under dark clear skies may be able to spot the dark nebula known as the Horsehead, tracing an equine outline below both the Belt and the Flame Nebula. Warning: the Horsehead can be a difficult challenge for many stargazers, but very rewarding.

This is just a taste of the riches found within Orion's star fields and dust clouds; you can study Orion for a lifetime and never feel done with your observations. To be fair, that applies for the sky as a whole, but Orion has a special place for many. New telescopes often focus on one of Orion's treasures for their first test images. You can discover more of NASA's research into Orion's stars - as well as the rest of the cosmos - online at nasa.gov.



Northern Hemisphere observers can find Orion during January evenings in the east/southeast skies. Can you spot the Orion nebula with your naked eye, in Orion's sword? How does it look via binoculars or a telescope? What other details can you discern? Please note that some deep sky objects aren't listed here for clarity's sake. For example, M43, a nebula located directly above M42 and separated by a dark dust lane, is not shown. Orion's Belt and Sword are crowded, since they star-forming regions! You can read more in our November 2019 article *Orion: Window Into a Stellar Nursery*, at bit.ly/orionlight.

Image created with assistance from Stellarium.



The inset image is the “first light” photo from the Zwicky Transient Facility, a large survey telescope designed to detect changes in the entire night sky by detecting “transient objects” like comets, supernovae, gamma ray bursts, and asteroids. For many astronomers, amateur and pro alike, Orion is often the “first light” constellation of choice for new equipment!

Image Credit: Caltech Optical Observatories
