The Eyepiece

SW FL Astronomical Society, Inc.
PO Box 100127
Cape Coral FL 33910

NEW MEETING TIME - 7PM!

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Mike Jensen - Editor

SEPTEMBER 2022

Greetings Everyone!

This issue is just a little bit smaller than the normal issue as I have been home recovering & rehabbing a new knee thanks to the miracle of modern orthopedics! For the first two weeks I was unable to sit at my desk longer than about ten minutes. Needless to say I have not been able to set up my telescope, but I am comforted by the fact that almost no one else in Florida has either, due to clouds.

We've got a lot going on getting ready for a new season of speakers, observing, imaging.

I'm sure I'm not the only one who has been eagerly awaiting the launch of the SLS (Space Launch System) and Artemis 1. The initial launch for Aug. 29th was scrubbed and we are now targeting Sept. 2nd as our next potential date.

Monthly Meetings

Our monthly meetings are held on the **first Thursday of each month**. **The meetings begin at 7:00pm**.

This month's meeting will be a combined live and Zoom meeting! Masks are optional.

Each meeting will have the same link/meeting ID (see below).

So, mark your calendar for:

Sept. 1, 2022
Oct. 6, 2022
Nov. 3, 2022

For instructions on how to use Zoom to access our meetings, click here. The actual link is

https://widener.zoom.us/j/96535769204

Meeting ID: 965 3576 9204

One tap mobile:
+13126266799,,96535769204#
(or)
+16465588656,,96535769204#

Observing Program Dates Announced

Below are the schedules for our Friday public nights at the FSW Observatory (3rd Friday of the month) and the Saturday Solar Observing events (1st Saturday of the month) at county parks.

FSW Observatory
9-16-22
10-21-22
11-18-22
12-16-22
1-20-23
2-17-23
3-17-23
4-21-23
5-19-23

Solar Observing/Park
10-1-22 / Ponce de Leon
11-5-22 / Bayshore Live Oak
12-3-22 / Gilchrist
1-7-23 / Ponce de Leon
2-4-23 / Bayshore Live Oak
3-4-23 / Gilchrist
4-1-23 / Ponce de Leon
5-6-23 / Bayshore Live Oak

President's Report

Brian Risley - President

We are ramping up for what is looking to be an exciting fall/winter set of events!

John MacLean and the program committee have come up with some exciting speakers. Please let your friends know about them and they can join in online or at the Planetarium. We appear to have stable high speed internet in the planetarium and have new microphone capabilities.

This month's program is "Rising Star – South African Astronomy" that is a full dome presentation. However, Heather has adapted the program to more of a flat screen presentation and we will be sending that out to the members on Zoom while those in the theater watch it on the dome.

We have more event requests for October. October 1 is International Observe the Moon night. I have a request for Oct 21st for Lee County Parks and Rec Fall Festival in North Fort Myers. This is an evening event and we will have Jupiter and Saturn well placed. We also have a request for a Solar Observing display on the 22nd during the day for Cape Kiwanis at Cape Coral High. I plan on doing the Oct 21 night event, but if someone is interested in doing the solar observing (it is a 6 hour+) event, please let me know. For both of these Fall Festivals candy for 400+ needs to be handed out.

As we cut our teeth on the new programs with Zoom, we may change the link for the meetings. If so, we will update it in the newsletter and let you know. If we have good Zoom turnout, we may need to reconfigure Zoom.

Our annual Liability Insurance renewal went up significantly from $400 to $535 with Auto-Owners. Through Dan Dannenhauer, we got a quote of $475 with Hartford.

GUEST SPEAKER PRESENTATIONS SERIES

We are excited to announce the initiation of the new "SWFAS Guest Speaker Presentations" series of talks. These will cover astronomical science and space exploration along with practical astronomy and astrophotography talks by various subject matter experts. We are lining up prominent scientists and researchers to explain the science and technology behind the exciting discoveries being made in recent years in astronomy.

The following presentations are already scheduled and we will be firming up talks in 2023 on a month-to-month basis.:

October 6, 2022	Dr, Fran Bagenal, University of Colorado Exploration of the Outer Solar System: New Horizons at Pluto and Juno at Jupiter
November 3, 2022	Dr. Luisa Rebull, NASA-IPAC The Universe in Infrared – Spitzer's Final Voyage
December 1, 2022	Dr. Desika Narayanan, University of Fla Forming the Brightest Galaxies in the Universe
January 2023	TBD - Targeting Astrophotographer
February 2, 2023	Dr. Thomas Pettiman, Planetary Science Institute Exploration of the Asteroid Belt

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The Astronomical League Report

As a member of the Southwest Florida Astronomical Society you are automatically also a member of the Astronomical League, a nationwide affiliation of astronomy clubs. Membership in the AL provides a number of benefits for you including receipt of The Reflector, the AL's quarterly newsletter, use of the Book Service, through which you can buy astronomy related books at a 10% discount. You can also participate in the Astronomical League's Observing Clubs. The Observing Clubs offer encouragement and certificates of accomplishment for demonstrating observing skills with a variety of instruments and objects. These include the Messier Club, Binocular Messier Club, the Herschel 400 Club, the Deep Sky Binocular Club, and many others. To learn more about the Astronomical League and its benefit s for you, visit http://www.astroleague.org

Reflector Magazine

You should have received an email from the Astronomical League linking to your digital copy of the Sept 2022 issue.
You can also directly access copies via the web at https://www.astroleague.org/reflector

Monthly highlight of the Astronomical League Observing Programs
(Article prepared by SWFAS Astronomical League Coordinator John MacLean)

The Astronomical League Bright Nebula Observing Program

This month's program requires dark skies to complete successfully and, unlike the previous programs discussed, the use of computerized Go-To technology for object acquisition is allowed. A minimum 8 inches of aperture is required.

Bright Nebula Observing Program

Bright nebulae include three classes: Reflection nebulae (R), Emission nebulae (E) and Supernova Remnants (SNR.) Some objects are a combination of both E and R types.

Emission nebulae are clouds of dust and glowing hydrogen gas where atoms in the cloud are ionized by nearby hot stars. When the excited electrons fall back to their previous energy states, visible light is emitted. Narrow band nebula filters are frequently very useful. A good example of an Emission nebula is M42, the Orion Nebula.

Reflection nebulae have the same composition but lack stars hot enough to fluoresce the stellar atmospheres. They shine by the dust in the nebula scattering starlight. Because these objects scatter light of all colors, filters are not generally helpful. An example of a Reflection nebula is M78 in Orion.

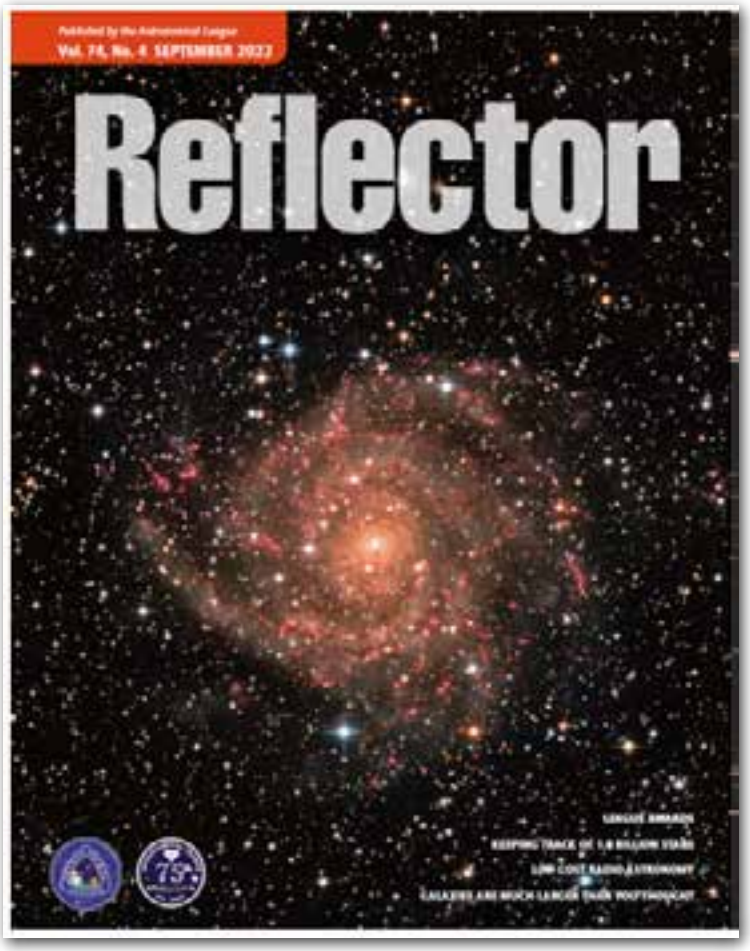
A Supernova Remnant is the remains of a catastrophic stellar explosion wherein much of a star's mass is ejected, often as a highly structured cloud or shell. These objects have strong emission lines and hence may benefit from the use of nebula filters. A good example is M1, the Crab Nebula.

150 objects covering both the northern and southern hemispheres are included on the Astronomical League's listing and the program offers three levels of accomplishment:

- The Basic level certificate requires successful observations of any 60 objects on the list.
- The Advanced level certificate is awarded for the attempted observation of 100 objects. At least 95 objects must be successfully observed. However up to 5 "negative" observations may be accepted provided that sufficient evidence is submitted to establish that the proper field was observed on at least two separate attempts.
- The Imaging level certificate is awarded for the successful imaging of 100 objects.

The Astronomical League recommends the following publication for reading and learning more about nebulae:
Coe, Steven R, Nebulae and How to Observe Them, Springer-Verlag, 2007

Reflector Magazine



If you're a paid member of SWFAS you should have received a copy of the Sept. issue of Reflector magazine in the mail.

If it didn't reach you, or if you prefer to read it in digital format, please click on the image to the left.

Each member of SWFAS is also a member of the Astronomical League and thus a recipient of the Reflector magazine. Enjoy!

Webb Detects Carbon Dioxide in Exoplanet Atmosphere

NASA's James Webb Space Telescope has captured the first clear evidence for carbon dioxide in the atmosphere of a planet outside the solar system. This observation of a gas giant planet orbiting a Sun-like star 700 light-years away provides important insights into the composition and formation of the planet. The finding, accepted for publication in Nature, offers evidence that in the future Webb may be able to detect and measure carbon dioxide in the thinner atmospheres of smaller rocky planets.

WASP-39 b is a hot gas giant with a mass roughly one-quarter that of Jupiter (about the same as Saturn) and a diameter 1.3 times greater than Jupiter. Its extreme puffiness is related in part to its high temperature (about 1,600 degrees Fahrenheit or 900 degrees Celsius). Unlike the cooler, more compact gas giants in our solar system, WASP-39 b orbits very close to its star – only about one-eighth the distance between the Sun and Mercury – completing one circuit in just over four Earth-days. The planet's discovery, reported in

2011, was made based on ground-based detections of the subtle, periodic dimming of light from its host star as the planet transits, or passes in front of the star.

Previous observations from other telescopes, including NASA's Hubble and Spitzer space telescopes, revealed the presence of water vapor, sodium, and potassium in the planet's atmosphere. Webb's unmatched infrared sensitivity has now confirmed the presence of carbon dioxide on this planet as well. For more info, click here.

The Night Sky Network

This article is distributed by NASA Night Sky Network
The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

The Summer Triangle's Hidden Treasures
David Prosper

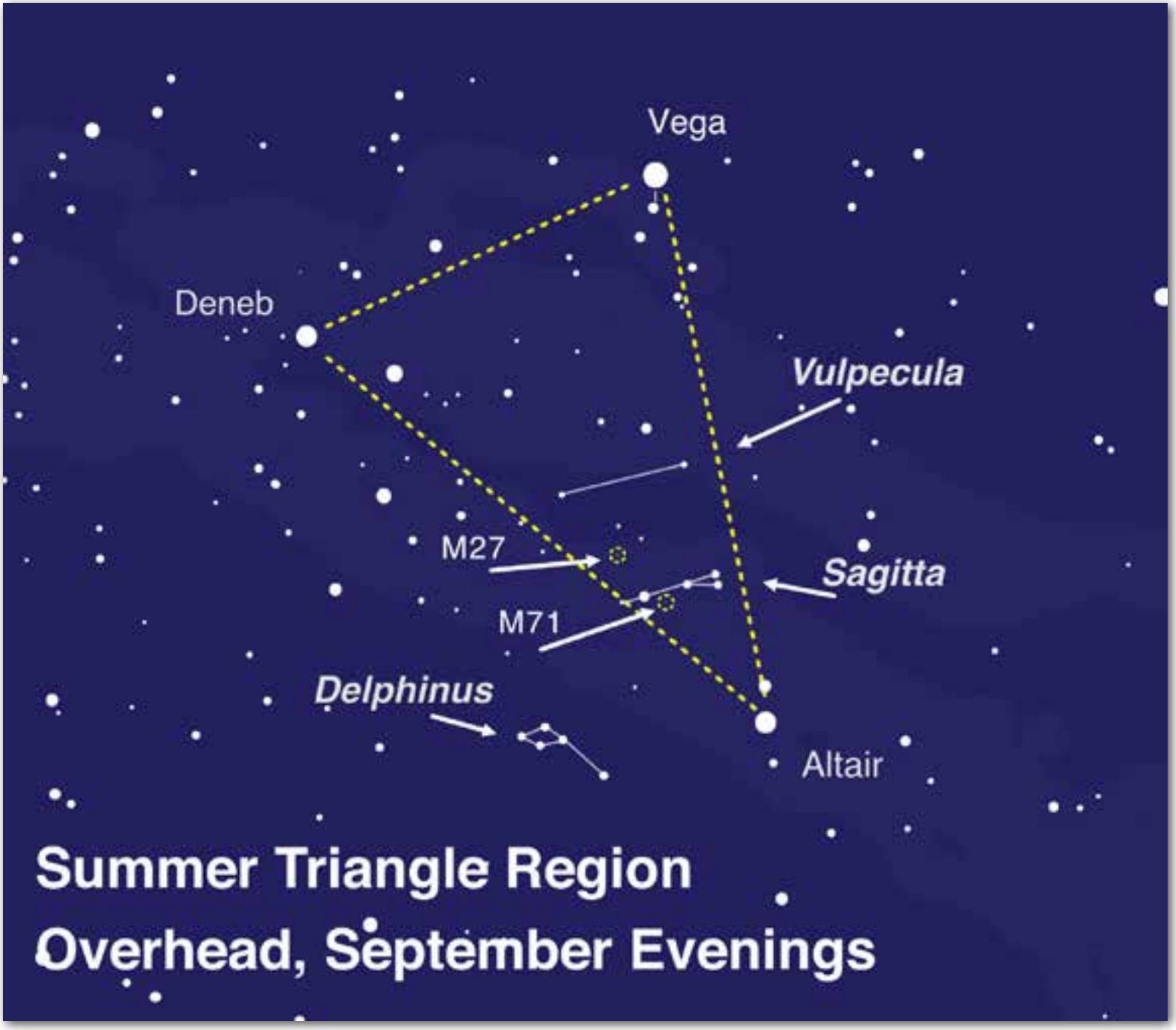
September skies bring the lovely Summer Triangle asterism into prime position after nightfall for observers in the Northern Hemisphere. Its position high in the sky may make it difficult for some to observe its member stars comfortably, since looking straight up while standing can be hard on one's neck! While that isn't much of a problem for those that just want to quickly spot its brightest stars and member constellations, this difficulty can prevent folks from seeing some of the lesser known and dimmer star patterns scattered around its informal borders. The solution? Lie down on the ground with a comfortable blanket or mat, or grab a lawn or gravity chair and sit luxuriously while facing up. You'll quickly spot the major constellations about the Summer Triangle's three corner stars: Lyra with bright star Vega, Cygnus with brilliant star Deneb, and Aquila with its blazing star, Altair. As you get comfortable and your eyes adjust, you'll soon find yourself able to spot a few constellations hidden in plain sight in the region around the Summer Triangle: Vulpecula the Fox, Sagitta the Arrow, and Delphinus the Dolphin! You could call these the Summer Triangle's "hidden treasures" – and they are hidden in plain sight for those that know where to look!

Vulpecula the Fox is located near the middle of the Summer Triangle, and is relatively small, like its namesake. Despite its size, it features the largest planetary nebula in our skies: M27, aka the Dumbbell Nebula! It's visible in binoculars as a fuzzy "star" and when seen through telescopes, its distinctive shape can be observed more readily - especially with larger telescopes. Planetary nebulae, named such because their round fuzzy appearances were initially thought to resemble the disc of a planet by early telescopic observers, form when stars similar to our Sun begin to die. The star will expand into a massive red giant, and its gasses drift off into space, forming a nebula. Eventually the star collapses into a white dwarf – as seen with M27 - and eventually the colorful shell of gasses will dissipate throughout the galaxy, leaving behind a solitary, tiny, dense, white dwarf star. You are getting a peek into our Sun's far-distant future when you observe this object!

Sagitta the Arrow is even smaller than Vulpecula – it's the third smallest constellation in the sky! Located between the stars of Vulpecula and Aquila the Eagle, Sagitta's stars resemble its namesake arrow. It too contains an interesting deep-sky object: M71, an unusually small and young globular cluster whose lack of a strong central core has long confused and intrigued astronomers. It's visible in binoculars, and a larger telescope will enable you to separate its stars a bit more easily than most globulars; you'll certainly see why it was thought to be an open cluster!

Delicate Delphinus the Dolphin appears to dive in and out of the Milky Way near Aquilla and Sagitta! Many stargazers identify Delphinus as a herald of the fainter water constellations, rising in the east after sunset as fall approaches. The starry dolphin appears to leap out of the great celestial ocean, announcing the arrival of more wonderful sights later in the evening.

Want to hunt for more treasures? You'll need a treasure map, and the Night Sky Network's "Trip Around the Triangle" handout is the perfect guide for your quest! Download one before your observing session at bit.ly/TriangleTrip. And of course, while you wait for the Sun to set - or skies to clear - you can always find out more about the objects and science hidden inside these treasures by checking out NASA's latest at nasa.gov.



Search around the Summer Triangle to spot some of its hidden treasures! To improve readability, the lines for the constellations of Aquilla, Lyra, and Cygnus have been removed, but you can find a map which includes them in our previous article, Spot the Stars of the Summer Triangle, from August 2019. These aren't the only wonderful celestial sights found around its borders; since the Milky Way passes through this region, it's littered with many incredible deep-sky objects for those using binoculars or a telescope to scan the heavens. Image created with assistance from Stellarium: stellarium.org

Left: M71 as seen by Hubble.

Astrophotography (SIG)

Special Interest Group

Join Our Astrophotography Special Interest Group (SIG) – Mike Jensen, Group Lead

REGULAR MEETINGS

Regular meetings are usually on the Third Tuesday of each month,

HOWEVER The next meeting is Tuesday Sept. 20th at 6:30

https://us02web.zoom.us/j/81077794455?pwd=MHJVL2VvZGZRK3JyM-1d5QVJiZE1TUT09

Meeting ID: 810 7779 4455
Passcode: Phot@S!G

ABOUT THE ASTRO SIG

Every month we get together on a Zoom call with a pretty loose agenda and manage to have an absolute blast talking about Astrophotography. I hope you'll join us if you're interested in Astrophotography.

We have a nice, diverse group with a wide range of skill sets and interests. Some DSLR/Mirrorless shooters mixed in with telescope shooters. Some use Star Trackers, some use goto mounts, some use laptops and some use a fun little unit called the ASIAIR (a small little computer inside a box about the size of a cell phone that connects to a tablet or smart phone).

On any given day or moment we can shoot an email out to the group and get suggestions and answers, how cool is that?

Now, the REALLY cool thing is that it looks like the pandemic is FINALLY starting to ease off so that means we can finally start getting together and be safe! That means more helping each other, more show and tell, more mentorship which is exactly why we created the Astro SIG.

So, if you want to learn Astrophotography (like Astro 101) with a LOT of fun people, join us.

Processing JWST Images Yourself

NASA made the image data from the JWST available to the public and we found a YouTuber who took on the task of processing this data to see if his was as good as NASA's.

Click on the image to the right to go to the YouTube tutorial.

Don't Make These Astrophotography Mistakes

By Mike Jensen

Whether you're a newbie or a seasoned pro, you're going to make some mistakes along the way. I would still call myself a relative novice at deep sky astro photography, BUT I am a professional photographer and I know that the basic components of photography apply to astro as well, whether it's wide field or a long reach. You still need to focus on the subject of your image!

When I decided to get more serious about astrophotography I joined SWFAS to learn more about astronomy and more about what I didn't know. I was a sponge for at least a year, and then decided to dip a toe in the water. After using a SA2i star tracker for about a year I decided to buy a goto mount and a deep sky telescope with all the trimmings. So, I jumped in to the water, placed my order and then proceeded to WAIT! I had placed my order in March of 2021 after EVERYONE in the world had decided they wanted to be astronomers during the Covid pandemic! So, all the suppliers were out of stock. After waiting patiently (not one of my strengths) I started to rattle the cages and finally got my mount after an 8 month delay. It was Nebula season so I borrowed a WO 61 from my friend Don and we got things going. Oh, I had also placed a pre order for the ASIAIR Plus. A GREAT decision despite being accused of going to the dark side!

PLANNING - Planning is one of the biggest mistakes made, and usually most ignored. You look at Clear Skies or Astrospheric and it looks clear so you're PUMPED and decide it's a good night to image!

- TARGET - What's your target? Are you shooting DSLR (hope not) or Mirrorless (hope so!) Have you researched it? Do you know where it is in the sky? Do you know the right tools to help you find them in the sky. I suggest Stellarium (either the web version or the desktop version)
- COMPOSITION - If you're not a photographer learning astronomy, you need to know something about composition. This is essentially placing your main subject in the right place in the image. It doesn't need to be perfectly placed in the center. Actually, it shouldn't.
- TIME IN THE SKY - How long and where is your subject in the sky? You don't want it too low, and you may not want it too high! Use Stellarium to help you with this.

SET UP - Setting up your gear is crucial! And doing so in an almost military precision manner is something I really suggest. Many astrophotographers have a workflow or a checklist. I recommend a written one. It's no fun to get half way through your sequence in a night and remember you forgot to balance your gear, or some other easy task to forget. Write it down and have it with you either on paper or on your phone or tablet when setting up. By the way, if you're shooting with a DSLR or Mirrorless camera, you are shooting in RAW, right?

Staying Cool - Again, this can be part of set up but you have to know the weather elements and gear you are dealing with. After you're set up, make sure you have allowed enough time for your gear to come to ambient temperature, then set your cameras up. If you're shooting with a DSLR or Mirrorless camera you need to allow an interval for cooling which is as long as your exposures are. So, two minute exposure, then two minute interval, then another exposure. For cooled cameras, just make sure you're not set at -20 or -30 on a night when the dew point already matches your temp. You'll need a higher temp for your cooled camera or you'll likely get frost on your sensor, or sensor cover.

Correct Exposure Times - One of my colleagues, Linwood Ferguson suggested researching Astrobin for use of exposure times, filters etc. Once you find an image you like, look in the description to see what the settings were.

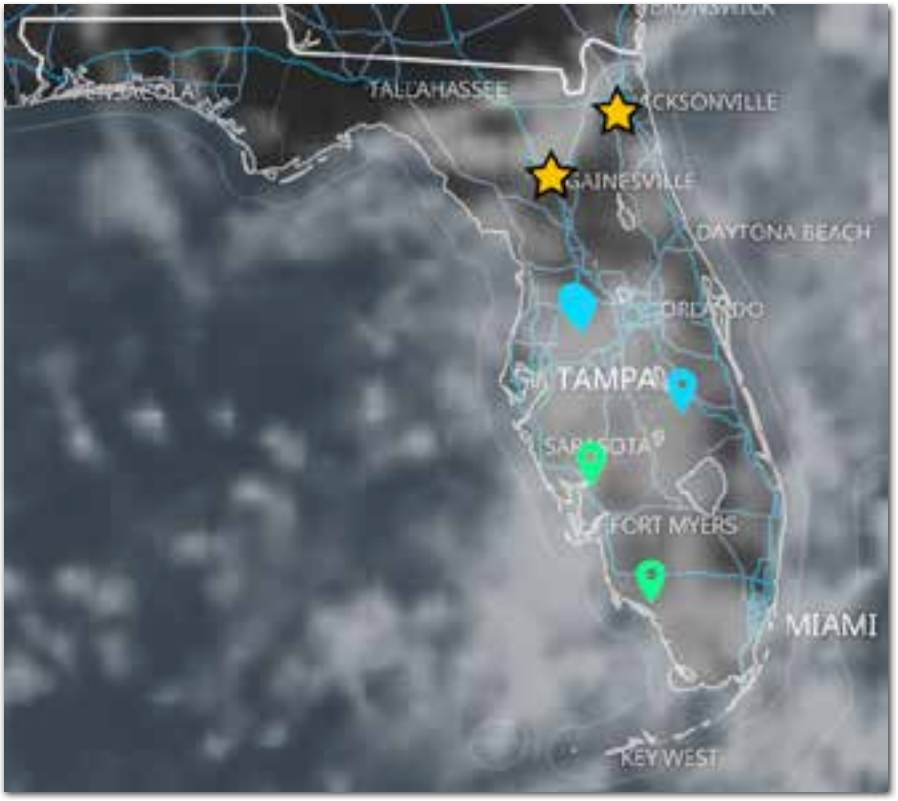
To Be Continued - I'll continue this article next month with some additional tips. Thanks for reading!

Astro SIG Images


Cygnus Loop - Sh 2-103 - Ray Bratton
Driveway - Addison, IL 8/26/2022
WO61 w flatener, Canon EOS Ra,
ASIAIR Plus, ISO800, 52 5min, 4h & 20m,
EQ6R Pro, UHC, APP, PS RAW

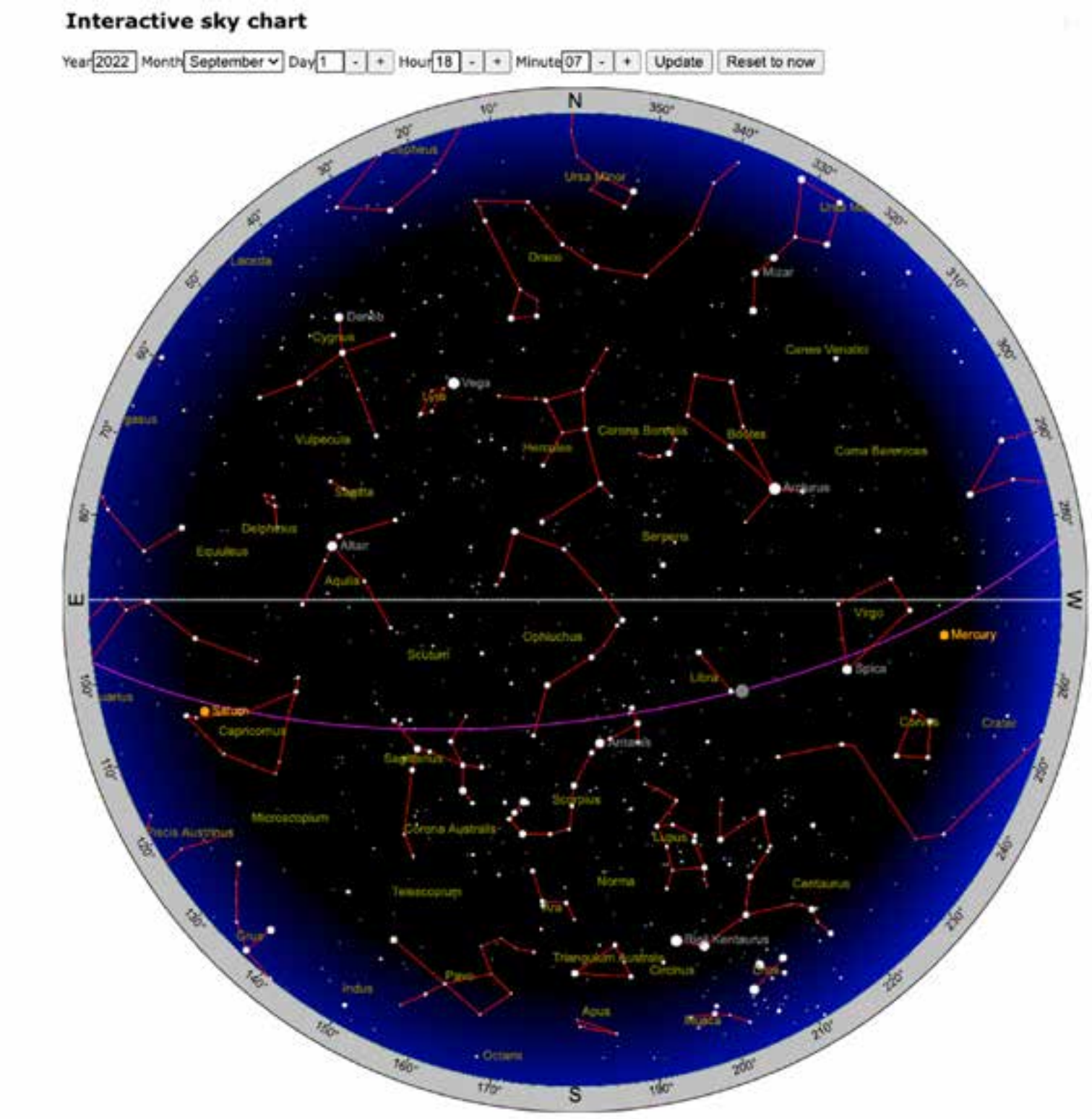
Many of you have probably been wondering "How do those amazing astrophotographers get those amazing photos when we have storms and clouds so much here in SW Florida? Well, the answer is, they go elsewhere! The snowbirds go back to Chicago and get their pics (like Ray's on the previous page). Others go out west to far off places like New Mexico, Arizona, Utah, or elevations higher than 8,000 feet. Below is the best we can get for much of this summer!

We're looking forward to more clearer skies of Fall and Winter.



LEFT - NGC 6188 by John Udart using data provided by Telescope Live, processed in Pisinsight.

Sept 2022 Sky Chart



You can download or view this map better at: https://heavens-above.com/skychart2.aspx?lat=0&lng=0&loc=Unspecified&alt=0&tz=UCT

Planet Positions

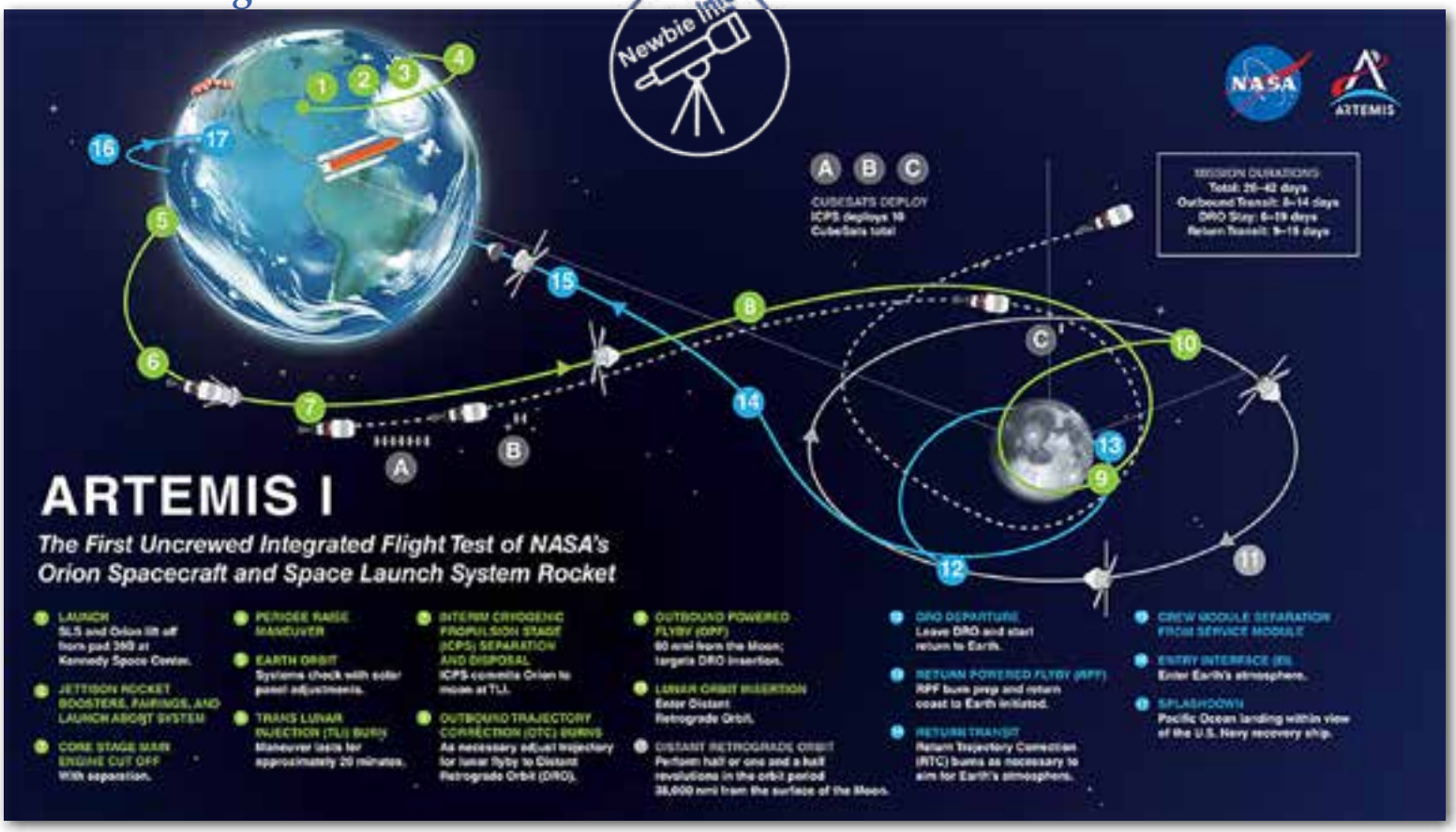
Click on the graphic above to go to Time and Date for a great simulation of the rotation of the constellations and the rising/setting of the planets. The chart below is set for April 7th but can be programmed for any date and time. The chart can also be found at this link on Heavens Above.

Planet Summary

Year 2022 Month September Day 1 Time 18:08:09 Update Reset to now

	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto
Right ascension	$12^h\ 15^m\ 23.5^s$	$9^h\ 52^m\ 30.9^s$	$4^h\ 20^m\ 8.7^s$	$0^h\ 26^m\ 17.4^s$	$21^h\ 32^m\ 24.6^s$	$3^h\ 4^m\ 54.3^s$	$23^h\ 40^m\ 21.1^s$	$19^h\ 54^m\ 13.4^s$
Declination	-4° 57' 46"	14° 5' 4"	20° 8' 24"	1° 7' 23"	-15° 58' 47"	16° 59' 47"	-3° 27' 20"	-23° 4' 4"
Range (AU)	0.852	1.660	0.954	4.040	8.904	19.313	28.940	33.850
Elongation from Sun	26.7°	13.6°	92.3°	152.5°	161.2°	110.4°	164.8°	137.1°
Brightness	0.5	-3.8	-0.1	-2.7	0.3	5.7	7.8	14.3
Equatorial Diameter	7.90"	10.06"	9.81"	48.80"	18.66"	3.65"	2.36"	0.10"
Phase Angle	96.3°	19.2°	45.4°	5.4°	1.9°	2.8°	0.5°	1.1°
Constellation	Virgo	Leo	Taurus	Pisces	Capricornus	Aries	Aquarius	Sagittarius
Meridian transit	13:32	11:09	05:37	01:46	22:48	04:24	01:00	21:10
Rises	07:33	05:09	23:36	19:42	16:49	22:21	18:57	15:11
Sets	19:32	17:09	11:37	07:45	04:51	10:23	06:59	03:13
Altitude	20.8°	-14.3°	-68.4°	-23.6°	19.0°	-58.7°	-12.1°	40.0°
Azimuth	264.7°	284.5°	20.5°	88.8°	106.9°	55.8°	93.5°	120.8°
Inferior Conjunction	2022-May-21 2022-Sep-23	2022-Jan-09 2023-Aug-13	-	-	-	-	-	-
Opposition	-	-	2020-Oct-13 2022-Dec-08	2021-Aug-20 2022-Sep-26	2022-Aug-14 2023-Aug-27	2021-Nov-04 2022-Nov-09	2021-Sep-14 2022-Sep-16	2022-Jul-20 2023-Jul-22
Superior Conjunction	2022-Jul-16 2022-Nov-08	2021-Mar-26 2022-Oct-22	2021-Oct-08 2023-Nov-18	2022-Mar-05 2023-Apr-11	2022-Feb-04 2023-Feb-16	2022-May-05 2023-May-09	2022-Mar-13 2023-Mar-15	2022-Jan-16 2023-Jan-18
Max. eastern elongation	2022-Aug-27 2022-Dec-21	2021-Oct-29 2023-Jun-04	-	-	-	-	-	-
Max. western elongation	2022-Jun-16 2022-Oct-08	2022-Mar-20 2023-Oct-23	-	-	-	-	-	-
Perihelion	2022-Jul-10 2022-Oct-06	2022-Jan-23 2022-Sep-04	2022-Jun-21 2024-May-08	2011-Mar-17 2023-Jan-20	2003-Jul-26 2032-Nov-28	1966-May-22 2050-Aug-17	1876-Aug-26 2042-Sep-03	1989-Sep-05 2237-Sep-15
Aphelion	2022-Aug-23 2022-Nov-19	2022-May-15 2022-Dec-26	2021-Jul-13 2023-May-30	2017-Feb-17 2028-Dec-28	2018-Apr-17 2047-Jul-15	2009-Feb-27 2092-Nov-23	1959-Jul-17 2125-Dec-01	1866-Jun-04 2114-Feb-19

Newbie & Beginner Facts



[Click here for the press packet for the Artemis I flight.]

- The Space Launch System (SLS) megarocket will send an Orion spacecraft into deep space on a crucial test of all systems to make sure they are ready to carry astronauts.
- NASA plans to test everything to its limit to get ready for the Artemis 2 crewed mission around the moon, and the Artemis 3 landing mission. Eventually, the agency hopes its Artemis program will help build up systems for exploring Mars.
- Orion will fly further than the three astronauts of Apollo 13, who flew a slightly modified trajectory around the moon in 1970 and as a result, swung into deeper space than the other Apollo missions. (The astronauts were dealing with a crippled spacecraft and had to fire their engines several times to get back to a path for a safe Earth arrival.)
- Depending on when it launches, Orion will be in space for somewhere between 39 and 42 days. For example, launches on Aug. 29 or Sept. 5 would result in a 42-day mission, but a Sept. 2 liftoff would begin a 39-day flight. (The difference is due to orbital dynamics, as the Earth and moon are constantly moving with respect to each other.)
- SLS is the most powerful rocket ever built and has never left Earth's gravity before. The core stage is more than 200 feet (61 meters) tall and towers over two boosters; that stage will use 730,000 gallons (2.76 million liters) of supercooled liquid hydrogen and liquid oxygen to power the engines. (Those engines, by the way, came from NASA's space shuttle program that retired in 2011.)
- While humans have used solar power in space before, it has been in the cozy confines of Earth orbit using the International Space Station. (The Apollo moon astronauts, working in the 1960s and 1970s, used fuel cells as their primary power source).
- Orion will change this dynamic by using solar power close to the moon. A service module, provided by the European Space Agency (ESA), has a mandate to provide oxygen, water and power to the Orion spacecraft. All of this will be provided by electricity converted from any energy that three solar arrays collect from our sun.

Meeting Minutes

Minutes of the Southwest Florida Astronomical Society – August 4, 2022

The regular monthly business meeting of the Southwest Florida Astronomical Society, held in the Calusa Nature Center Planetarium and via Zoom conference, was called to order at 7:12pm by president Brian Risley. There were 14 present in the Planetarium, including six visitors, and there were 12 Zoom participants.
John MacLean gave a presentation on the various types and levels of observing programs available through our membership in the Astronomical League.

Upcoming events listed in the printed agenda were discussed. International Observe the Moon Night is October 1. Perhaps we could host an event at Babcock Ranch? Don Bishop will check with them.
Tom Segur has a list in the August Newsletter of FSW/Charlotte County evening observing events, and solar observing events in various Charlotte County parks.

It was suggested that Centennial Park in Fort Myers might be a good spot to host public observing events.
The club's annual membership in the International Dark Sky Association is up for renewal. The cost is $100. John MacLean made a motion, seconded by Ray Bratton, to approve the expense. The motion passed on a voice vote.

Brian Risley is seeking a person or persons to take over the leadership of the club, and a person to keep track of the club's equipment.

Mike Jensen reported the Astrophotography Special Interest Group is doing well, though they are dealing with a lot of cloudy sky.

John MacLean made a motion, seconded by Don Bishop, to approve the minutes of the June meeting as e-mailed to the membership. The motion passed on a voice vote. (There was no July meeting.)
Treasurer John MacLean presented the Treasurer's Report showing a June ending balance of $3439.24. Sean Dey made a motion, seconded by Jerry Guyer, to approve the report. The motion passed on a voice vote. John further reported the July ending balance of $3464.24. Tom Segur made a motion, seconded by Don Bishop, to approve the report. The motion passed on a voice vote.

Mike Jensen is continuing to work on improvements to the website.

The meeting was adjourned at 9:24pm.

Submitted by Don Palmer, secretary.