SPACE

St. Petersburg Astronomy Club Examiner

January 2024 **Editor – Guy Earle**

The St. Petersburg Astronomy Club has been the center of family astronomy in the Tampa Bay Area since 1927. Our 406 adult members are dedicated to promoting and sharing the wonders and science of astronomy. We host a dark-sky star party each New Moon at Withlacoochee River Park, along with local star parties, telescope-making workshops, science lectures, astronomy lectures, educational outreach sessions and much more.

Inside this Issue:

February Preview

Next month, the *Examiner* will show photos from our 2024 Orange Blossom Special Star Party. An in-depth review will be done by out intrepid field reporter, Kelly Anderson, in the March edition.

There are some changes to this year's scheduling of OBS activities, such as when the swap meet will be held and how the prizes will be awarded. Check the schedule on page 14 of the newsletter.

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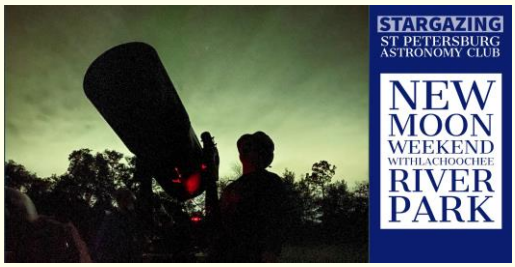
Also, please note on the following page that SPAC has a new Zoom account, if you are going to join our General Meeting virtually. Hopefully, you can join us in person to welcome **NASA astronaut Nicole Stott** this month.

January General Meeting

This month's general meeting will take place on Thursday, Jan. 25th at **7:30 PM**. The meeting will be ***in person*** at St. Petersburg College, Gibbs Campus, 6405 5th Avenue North, Natural Science Building, Classroom 236, 2nd floor, and **also virtual**. This month, we are honored to have **NASA Astronaut Nicole Stott** as our speaker. After the presentation, you will have an opportunity to purchase and have Nicole sign her book: *Back to Earth What Life in Space Taught Me About Our Home Planet*.

Join Zoom Meeting HERE
Meeting ID: 852 9687 2152
Passcode: 111992

The club's **New Moon observing weekend** will by the OBS star party from Feb. 7th-11th at Withlacoochee River Park east of Dade City.



New SPAC Members

We would like to welcome Jason & Margie Bedell, Billy Kidney, Juan Nicholls, Edward & Genevieve Chesky, Kevin Jamison & Karla Davis, Matthew & Cheryl Moore, Mike Morea, Becca Reed, Naseeb Nas Kaleel, Daniel Mendoza & Ana Alves, David Staiti, Vincent Risalvato & Tabitha Castillo, and Ambre Sliger to our family of members.

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President's Message

Mike Partain

I hope everyone had a safe and happy New Year. We are only a few weeks away from our annual Orange Blossom Special star party held at the Withlacoochee River Park near Dade City. Hopefully this crazy weather will abate and we can enjoy some clear skies! Be sure to hold off on any astronomical purchases until after February 11th.

A few months ago, I had the pleasure to attend the Fall Star Party at Chiefland. All though we had only one night, it was refreshing to see the efforts placed into revitalizing the field and club by Richard Hennig and Lisa Eager. Prime observing areas are becoming increasingly sparse as commercial and residential development continue to spread out across our state.

Our club has had a long tradition of gathering on the monthly new moon weekends to observe and share our experiences and knowledge. I first began my monthly treks back in 2001 when we had the use of the property and club house at our old Hickory Hill site located near Brooksville, Fl. Back when I started, the club was primarily a visual observing club with a handful of astrophotographers. Twenty years later, the composition of the club has reversed with most of our members astrophotographers. Regardless of whether you are an astrophotographer or visual observer, coming out to a new moon weekend offers a number of benefits to all of us. The primary benefits are the ability to network in real time, view and see other equipment and learning the tricks of the trade albeit visual techniques or for the computer.

I'd like to encourage our members to find ways to come out to the Withlacoochee River Park and experience what we have to offer there for our members. You can observe for the night or stay in your RV or tent for the weekend. The cost is only $15/night if you stay the night. The club collects the cost and we in turn donate it to the park. As our club grows, we are also looking to expand our ability to camp and observe on the field. One goal we are currently exploring is the addition of a equipment building for the club's two 20 inch dobsonian telescopes along with expanding electrical services to the North end of the field. We will keep you updated as this project progresses along.

In closing, I hope to see everyone at OBS next month and if you have been out to the Withlacoochee River Park, please come out on a new moon weekend and observe with your club members. Our club has a lot to offer!

SPAC New Moon Weekend Withlacoochee River Park December 8th-10th, 2023

By Intrepid Field Reporter

"Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist. Be curious."
– Stephen Hawking

KELLY ANDERSON

Prompted by a less than optimistic forecast for Friday and Saturday, a few stalwart souls started the New Moon weekend on Wednesday. Joe Canzoneri, Bob & Rita Mizell, Les Gatechair and your Intrepid Field Reporter arrived at the Withlacoochee River Park a bit earlier than usual. At mid-afternoon the temperature was moderate, light breezes prevailed, and the skies were fair. As the Sun made its way behind the Western horizon temperatures dropped precipitously, dipping into the mid 30's (!) by the early hours. Compensating for the chilliness the skies were mostly clear, with only scattered stratus and cirrus. Seeing was good for the most part. Humidity was low so dew-zappers weren't required. Well, at least not until we'd all gone off to bed with our electric blankets at full power.

Tadpole Nebula (IC 410) by Joe Canzoneri

Thursday morning dawned bright and clear. We early risers were treated with a coating of hoar frost on the ground and other exposed objects. The top of my 4-foot utility table was covered with inch thick frost! I had a momentary flashback to my days growing up in Minnesota.

Richard & Mary Garner and Gerry Graszi joined us on Thursday. Temperatures followed the predicted warming trend with mid-70s in the afternoon and only high 40s for an overnight low. Dew was definitely heavier, placing high demands on our dew heaters. At dusk we watched scattered high level clouds move in. Skies became cloudy with scattered sucker holes, and occasionally overcast making observing problematic. Imaging was a challenge.

Friday greeted the arrivals of Tim Harris, Jack & Roni Fritz, and Bob Stelmock. Fair weather and moderate temperatures were much appreciated, but dusk brought a total overcast that didn't clear until dawn. The forecast was once again right on. Oh well, there's still hope for Saturday to improve our observing luck.

Tulip Nebula (SH2-101) by Kelly Anderson

Mike Partain and Christian Ruback arrived Saturday morning. Guy Earle and Jamie Kenas also came out for the evening. Seeing was better that night, but not great. We were treated with total overcast alternating with clearing to large clear areas, then closing in again. The bright spot of the evening was Mike's night vision eyepiece plugged into his 16-inch Dobsonian. Absolutely amazing how that compact piece of technology amplified the light. M 42 was incredibly bright and filled with detail … the sight was much like a 60-second exposure. I encourage everyone to buy one of these. That way I can look through yours and not have to come up with the $4,000 purchase price.

The first New Moon Weekend of the New Year will be January 5 – 7. Historically the first New Moon of each year has been perfectly clear and good seeing is guaranteed. (I just made that up, but one can dream. Plan on being there.)

The Orange Blossom Special with be held February 7 – 11, and I hope you have already registered. All the electric spots on the field have been reserved, but there are still a few camping spaces available in the campground with water and electrical hook-ups. For the more rugged individuals, there is virtually unlimited camping available with no utilities.

The Galaxy

Torrent of light and river of the air,
Along whose bed the glimmering stars are seen
Like gold and silver sands in some ravine
Where mountain streams have left their channels bare!

Henry Wadsworth Longfellow

The link for the 2024 OBS Telescope Raffle can be found HERE

New Low-cost Robotic Imaging Telescopes, are they worth it?

Bob Stelmock

I have both the Dwarf and SeeStar, and have done hundreds of pictures with each. They are both Good and fun to use. The apps keep getting better as time goes on with improvements in ease of use and quality. They are very close in cost, but with a different field of view. I would say the Seestar at this time is more automatic and the easier to use. But the Dwarf is so much smaller.

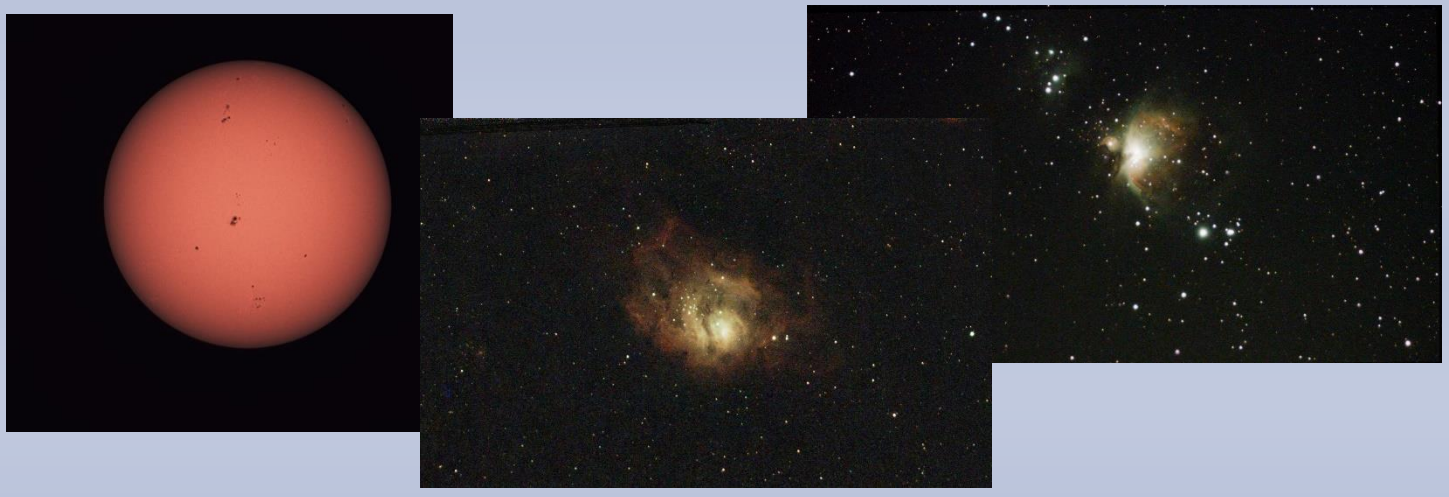
But the Seestar has an edge for now. The Seestar has a better 50mm triplet scope and a cleaner app.

Dwarf Labs, Dwarf II

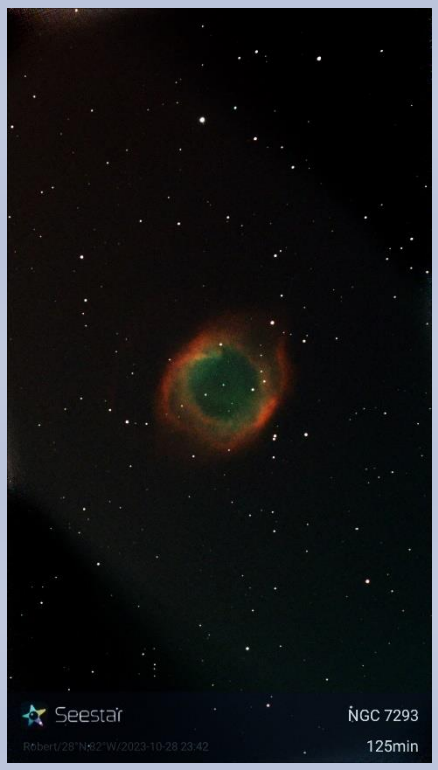
The Dwarf II is what is known as a smart telescope. These are designed to make setup and aquiring images extremely simple. You could be looking at Nebulae, Galaxies or Star Clusters within minutes. It has two lenses that can be used by the operator. A telephoto lens and a wide-angle lens.

Connecting to the Dwarf II is via WiFi and Bluetooth from your mobile telephone or tablet on both Android and Apple devices. The Dwarf II works by utilizing live stacking and will show you a view of any target in the target list (or manually entered co-ordinates) within a few minutes.

The Dwarf II is an all in one Telescope, Autofocuser, camera, and built in light uv/ir filter. The Dwarf II 5 modes - Astro (DSO, Lunar & Solar Imaging), Time-lapse, Panorama and Scenery (daytime). The Dwarf II telephoto lens has a wider field of view than the Seestar so it is ideal for slightly larger targets. There are more adjustable settings with-in the Dwarf app, like doing a stretch of the stacked image. Also gain settings are there too. B4 the first imaging session a set of darks are taken for many gain and time settings, then used for 6+ months. This takes a while to finish. IT then makes a dark library for use. Might need to be redone in 6 mo.

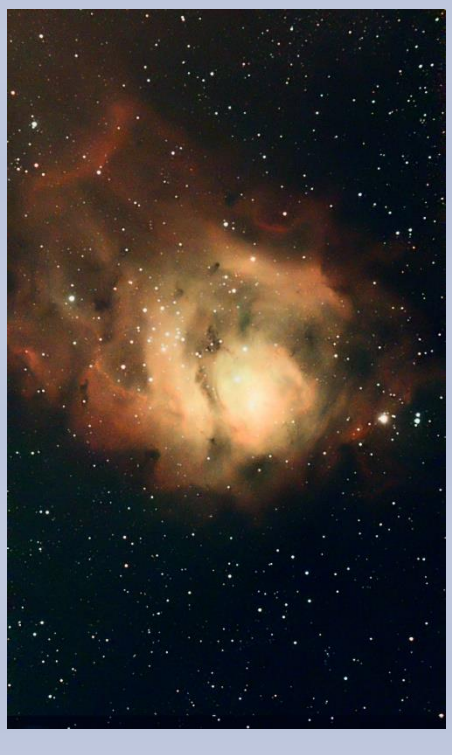


ZWO Seestar s50



The ZWO Seestar is also what is known as a smart telescope. Connecting to the Seestar is via WiFi and Bluetooth from your mobile telephone or tablet on both Android and Apple devices. The ZWO Seestar works by utilizing live stacking and will show you a view of any target in the sky atlas within a few minutes. Now with 10,20,30 seconds of exposure.

The Seestar is also an all-in-one Telescope with Apochromatic,3-lenses, Autofocuser, camera, ASIair type controller and built in light pollution filter. Now, including a SOLAR external filter. The Seestar 5 modes - Stargazing (stacking)(DSO Imaging), Solar, Lunar, Planetary and Scenery (daytime). There is also a Sky Atlas, nearby map to see other users close by and a community page where you can see images taken from users around the globe. Additionally, there is a "tonight's best" to help you find targets that are above your horizon.



Some folks spitting out negative comments don't realize that these things are game changers. No need for a laptop. No need to haul a bunch of gear. Both units use plate solving tec for gotos.

With todays LIGHT POLUTED skies, these might be the best beginner or user telescope options for many of us. I'm in Port Richey and over the last 15 years my eyepiece observing from home is almost done, with my local light pollution. But these low-cost imaging options are letting me have viewing from my home again.

These devices cost about $500 and do a darn good job, and very easy to setup and use. The total setups weigh in at below 10 lbs, are easy to move and setup in less than 5 min. And I can now set in my ac living room, in my easy chair and enjoy the night sky remotely! Too be honest I have a POD observatory with $$$ of equipment in it, but the small robot telescopes are faster and easier to setup! In Seeestar a new fresh dark is made for each viewing session (takes about 1minute)

But they both have their limits of exposures and quality. They do not replace a good imaging telescope system for quality photos, but do come close. A high-quality portable imaging telescope system is big $$

scope	$1500	WO redcat WIFD 61
mount	$2500	ZWO AM5/tripod
camera	$2000	ASI2600
auto focus	$200	ZWO AF
guider/extras	$500	ASI178/40mm scope/filters/ect
Total	$6700	VRS Seestar/Dwarf 2 $500

There is a big cost/quality difference in setups but the FUN difference is EQUAL with each!! In my opinion now in 2024 I might suggest to any new telescope user to get a $500 robot scope. I think with the AI automation that these $500 setups have and with the light pollution we now have. it would be what I recommend newbies to get! The ease of use 'to find, track and capture images is outstanding! The stacked image does help beet up light pollution problems.

And also, for anyone that would just like to enjoy the night sky…even the experienced. The easy/peazy way!

Dwarflab Dwarf II –Is More compact and portable and can image larger astronomical objects with a wider field of view. ZWO Seestar S50 – Higher image quality due to narrower field of view and higher aperture, but larger and less portable somewhat. A nice you tube about both; they do a very good job in comparing both. https://www.youtube.com/watch?v=MTKEamF4eIw

Specs

	DWARF 2	ZWO Seestar S50
Aperture	24 mm	50 mm (triplet)
Focal length	100 mm	250 mm
Focal ratio	F/4.2	F/4.9
Weight	2.7 Lbs	6 Lbs
Megapixels	8/2 MP	2 MP
Resolution	3840x2160	1920 x 1080
Sensor	SonyIMX415	SonyIMX462
Price	$459 – $595	$499

A nice review of both: https://skiesandscopes.com/dwarf-ii-vs-zwo-seestar-s50/

Ill include some image examples that I took from these scopes. I do not process my images, other than using google photos on my phone to adjust the images for displaying. Yes you can process them but I do it the easy/peazy way… 5min max…lol with the stacked .jpg from the scopes. The Dwarf has many more adjustments you can do to the stacked image, but the end results are very close with both setups. It does take some time at 10 to 20 seconds stacking to overcome the signal to noise levels…sometime 45 min of date. But you just let the software do its thing till you are happy with the live stacked image. Tracking is great on both, but seestar is a bit better and automatically rejects bad frames. Gotos are great and plate solved on both units. Iv included a photo I took and stacked in the seestar (NGC 7293) for over 120 min! The software just does a good job keeping field rotation down and only stacking good frames…the Seestar does it best. Are they worth it ? YES for the FUN Factor….100% (also it's nice to use to look around the sky for targets for the $$ Big rig, while its collecting hours of data). I will have more on this subject at 2024 OBS.

There are some interesting factors to note, about the new, affordable, smart telescopes; and their huge impact on amateur astronomers. Of course, I'm referring here to The Dwarf 2, and The Seestar S50. These are the two affordable, smart telescopes, which are quite impressive.

It's very obvious, how valuable, welcomed, and useful they are to experienced Astrophotographers. As I've written before, I believe those who have done (or even tried) conventional Astrophotography, will be the ones who appreciate these telescopes the most! However, there are certain (possibly unexpected) results/outcomes due to the release, and availability of these adorable devices:

Their simplicity and ease of use, will get folks trying Astrophotography – who might otherwise had never had even considered it. ✓ *Note: This is a confirmed fact - as per the myriad of posts on social media!

They will be instrumental, in getting visual only astronomers to finally give Astrophotography a chance! ✓ *I've been seeing this too!

They are sure to get many of those who have left the hobby of Astrophotography back into it. Like me! I'm getting back into AP again!

I am sure they will also be responsible, for many beginner-level astrophotographers getting involved in conventional/traditional Astrophotography. ✓ Yep!

And last, but not least, I believe they will get people interested in astronomy, who had never even considered it before. Due to the sheer ease of use of these devices! ✓ Yes! I've seen this too!

Of course, I've been involved in visual astronomy for a relatively long time. Once, a long time ago, I figured-out which hobby I'd spent the most money on...And it was astronomy! (visual, at the time). So I figured, it must be the hobby I love most? lol!

In my case, I left the hobby of Astrophotography several times over the years. And again, in my experience, it was my unwillingness to spend so much time in front of a laptop screen, post processing images.

However, there are a multitude of reasons, and many different steps required to complete the final processing of an astrophoto; which some individuals may not be fond of.

For some, it might be the polar alignment of a traditional rig. For someone else, it might be the time required, waiting for the stacking of images to complete. For another person, it might be the investment in software, typically required for an Astrophotographer (to get really nice results). Or, the fact that non-image frames need to be taken and organized (darks, biases, flats, etc.). For others, it may simply be the overall expense of the hobby. Who can say?

Everyone is a unique individual, and there can be many reasons why some people avoid conventional Astrophotography. Although generally speaking, these same folks, would really enjoy capturing their own photographs of deep sky objects - if somehow, it could be done more easily…

And, of course, just so that I don't leave anyone out – we are aware of many astrophotographers, who still enjoy conventional/traditional Astrophotography as a hobby. Many of these folks still wouldn't give serious consideration to these new, affordable, smart telescopes. Some of them may tenaciously cling to traditional astrophotography, and might not even consider using a smart telescope, no matter how advanced (or expensive). And, of course, that's totally fine too – more power to them. There should be some people still keeping the fine art of traditional astrophotography alive…

OBS 2024 Update

MIKE PARTAIN

We are three weeks away from the official start of OBS 2024. This year we have a full house with, for the first time that I can remember, the back campground sold out. I am excited for some of the changes we made this year in our OBS program. The biggest change is how we will distribute our door prizes. While donations continue to be down., we augmented our prize selection with purchases made by the OBS committee. The big difference in the door prize and closing ceremony this year will be that you will be given 5 tickets when you check in and then the option to purchase more tickets to put into the box for the prizes you wish to attempt to win. No more Bob's knobs for those refractor owners or a size small orange OBS shirt when you are an extra-large! This year's raffle scope will be drawn as part of the closing ceremonies. If you haven't already done so, be sure to purchase your tickets for the SeeStar intelligent scope ASAP.

Another change in our OBS schedule will be the swap meet. We are holding the swap meet on late Friday afternoon so as to not rush an already full Saturday afternoon. Be sure to bring cash and your old equipment to see. The club will also have equipment for sale as well with proceeds going to the club for our future projects.

Les Gatechair has been gracious enough to take lead on a revamped astro-photography program with some new categories including landscapes/starscapes that will allow everyone to participate. Voting will be done online through a system orchestrated by our one and only DOUG (insert Doug pic here). Everyone will be able to vote by phone and Doug is arranging for WiFi on the field. We will also be using our texting platform to send alerts and updates during the event. OBS is going hi-tech.

Our staff will arrive Sunday and we ask for those who are planning to arrive early, to make sure they pay the fee for each early day and that no arrivals occur before 2 PM on Monday so as to give time for us to get the field ready for parking. As always, clear skies and feel free to reach out to me if you have any question.

OBS 2024 Schedule

Note: Schedule updates and announcements will be sent by text message to your mobile phone.

Thursday, February 8, 2024			
9:30 AM	Reception Opens - Check-in Begins	Mike Partain	Reception
10:30 AM - Noon	***3d Printing for Astronomy things***	Mike Davis/Allen Maroney	Lab Tent
1:00 PM - 2:30 PM	***What I Love and Hate About Astronomy Software***	Les Gatechair	Lecture Tent
2:30 PM - 4:00PM	***OSC Astrophoto Nebula Processing with Pixinsight***	Peter Mclean	Lecture Tent
6:00 PM	Reception Closes - Thursday Check-in Ends	Mike Partain	Reception
6:00 PM - 6:00 AM	Observing Time	All	Observation Field
10:00 PM - 8:00 AM	Quiet Time	-	-
9:00 AM - 5:00 PM	Tents, Golf Carts, and Portapotties Arrival	Jim Hunter	Observation Field

Note: Schedule updates and announcements will be sent by text message to your mobile phone.

Friday, February 9, 2024			
9:30 AM	Reception Opens - Check-in Begins	Mike Partain	Reception
9:30 AM - 11:00 AM	Bicycle Trail Ride (bring your own bike)	Tim Harris	Reception
9:30 AM - 11:00 AM	Nature Walk	Mike Davis	Reception
11:30 AM - 1:45 PM	Ladies Luncheon	Carli Partain	Meet at Reception
12:00 PM - 1:00 PM	Mirror Lab Demonstration	Mike Davis	Lab Tent
1:30 - 3:30 PM	Swap Meet	Guy Earle	Lecture Tent
4:00 PM - 5:00 PM	Telescope Walk About	Allen and Mike Davis	Lecture Tent
6:00 PM	Reception Closes - Friday Check-in Ends	Mike Partain	Recption
6:00PM - 7:00 PM	PVS 14 Night Vision Astronomy Demonstration	Mike Partain at my scope	Mike Partain's Scope
6:00 PM - 6:00 AM	Observing Time	All	Observation Field
10:00 PM - 8:00 AM	Quiet Time	-	-
5:00 - 6:30 PM	Welcome, Announcements - Meet and Greet - Snacks	Mike Partain/ Guy Earle	Lecture Tent

Note: Schedule updates and announcements will be sent by text message to your mobile phone.

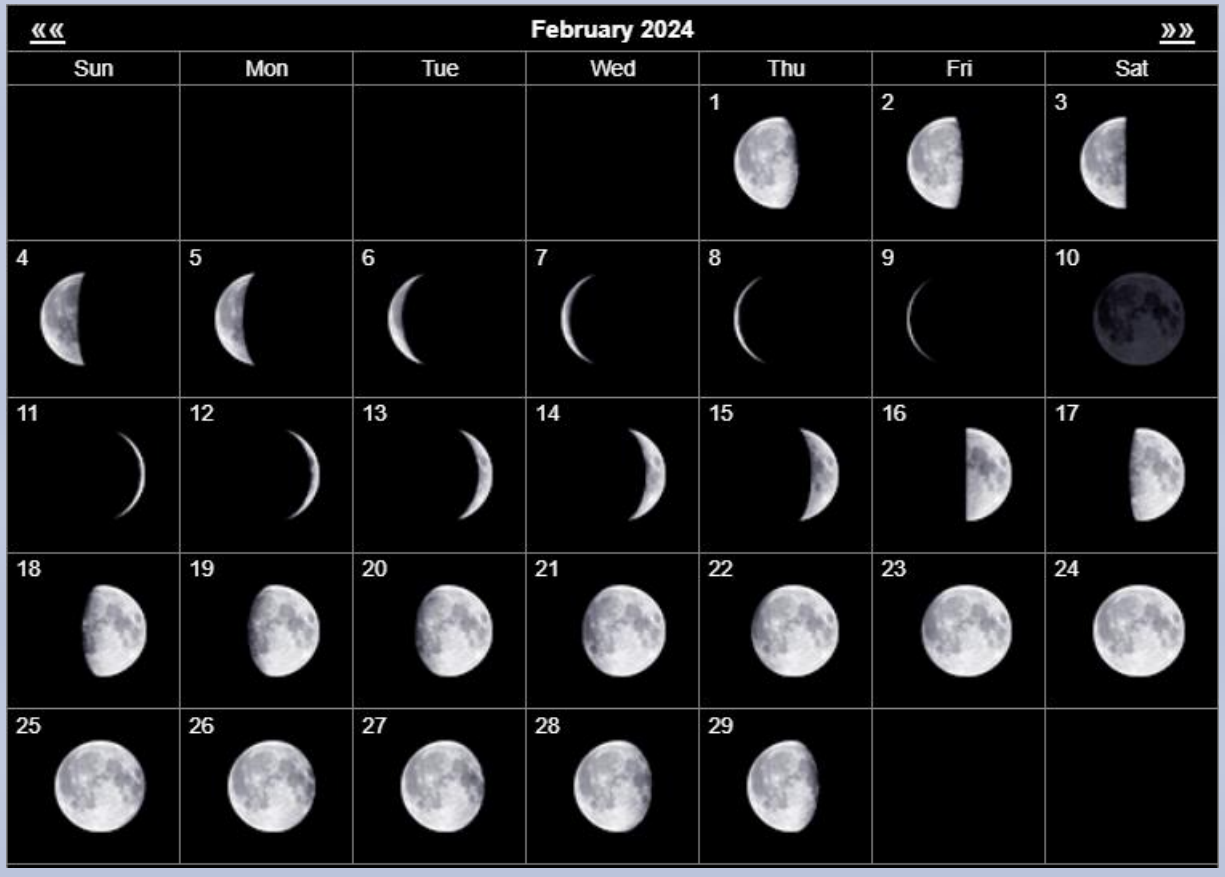
Saturday, February 10, 2024			
9:30 AM	Reception Opens - Check-in Begins	Mike Partain	Reception
10:00 AM	Deadline for Photo Contest Entries	Les Gatechair	Receiption
11:00	Reception Closes ***ALL RAFFLES CLOSE***	Mike Partain	Reception and Lecture Tent
11:30 -1:00 PM	Hee Haw Hayride	Duane Mericle	Reception
1:00 - 2:00 PM	***What I Love and Hate About Astronomy Software***	Les Gatechair	Lecture Tent
2:15 - 3:15 PM	***Seestar and Astroimaging***	Bob Stelmock	Lecture Tent
3:30 PM - 5:00 PM	Group Photo	Allen Maroney	Lecture Tent
	Closing Ceremonies/Astrophotgrahy Winner Announced	Mike Partain/Guy Earle	Lecture Tent
	Raffle Prizes (MUST BE PRESENT TO WIN)	Mike Partain	
	Raffle Scope Drawing (Need not be present to win)	Mike Partain	Lecture Tent
5:00 PM - 6:00 PM	Dinner Served - Prepaid with DnD BBQ & Catering	Those with "Sat Meal" on nametag.	Lecture Tent
6:00 PM - 6:00 AM	Observing Time	All	Observation Field
10:00 PM - 8:00 AM	Quiet Time	-	-
Sunday, February 11, 2024			
7:30 AM -Noon	Pack and clean-up	All	Your campsite
8:00 AM - 10:00 AM	Fold and stack lecture tent tables and chairs	Kelly Anderson + 2 staff	Lecture Tent
8:00 AM - 10:00 AM	Pack electrical	Jack Fritz + 1 staff	Huff House
8:00 AM - 10:00 AM	Pack-up check-in tent.	Mike + 1 staff	Reception
10:00 AM - Noon	Pack-up hospitality tent.	Mike + all staff	Hospitality Tent
Noon	Say our goodbyes and head for home		

* Present to win means inside or directly to the rear of the lecture tent.

We have reserved the Activity Field and RV Campground from Sunay Noon through the following Sunday Noon for the Star Party. Please plan your

SPAC will be having our annual swap meet at our OBS star party at Withlacoochee River Park on **Friday, February 9th from 1:30-3:30**. It will be at the lecture tent, and you can set up a bit earlier if you wish, say 1-1:30.

February Lunar Calendar



February 1, Spica will be 1.7° south of the Moon

Third Quarter February 2

February 4, Antares will be 0.6° south of the Moon

February 8, Mars will be 4.2° north of the Moon

New Moon February 9

February 10, the Moon will be at Perigee: 358,088 km from Earth

February 10 Saturn will be 1.8° north of the Moon

February 13, the Moon will cross the celestial equator going northward at the Ascending Node

February 15, Jupiter will be 3.2° south of the Moon

First Quarter February 16

February 16, the Pleiades will be 0.6° north of the Moon

February 20, Pollux will be 1.6° north of the Moon

February 22, Venus will be 0.6° north of Mars

February 23, Regulus will be 3.6° south of the Moon

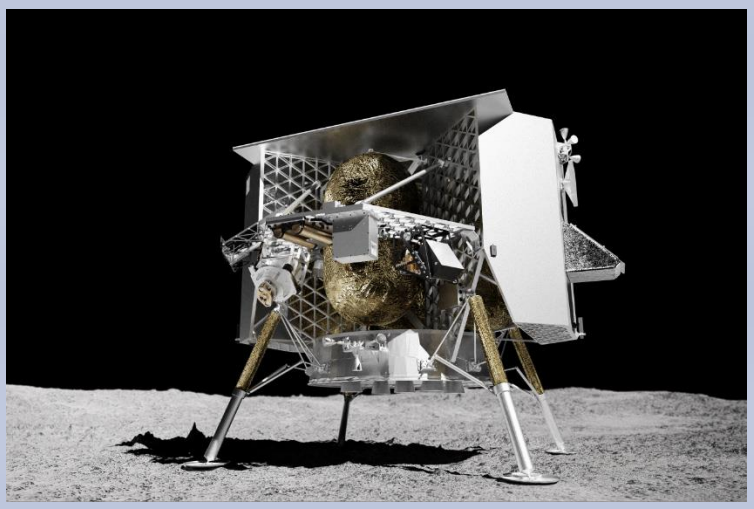
Full Moon, February 24, the Full Snow Moon

February 25, the Moon will be at Apogee: 406,316 km from Earth

February 27, the Moon will cross the celestial equator going southward at the Descending Node

February 28, Spica will be 1.5° south of the Moon

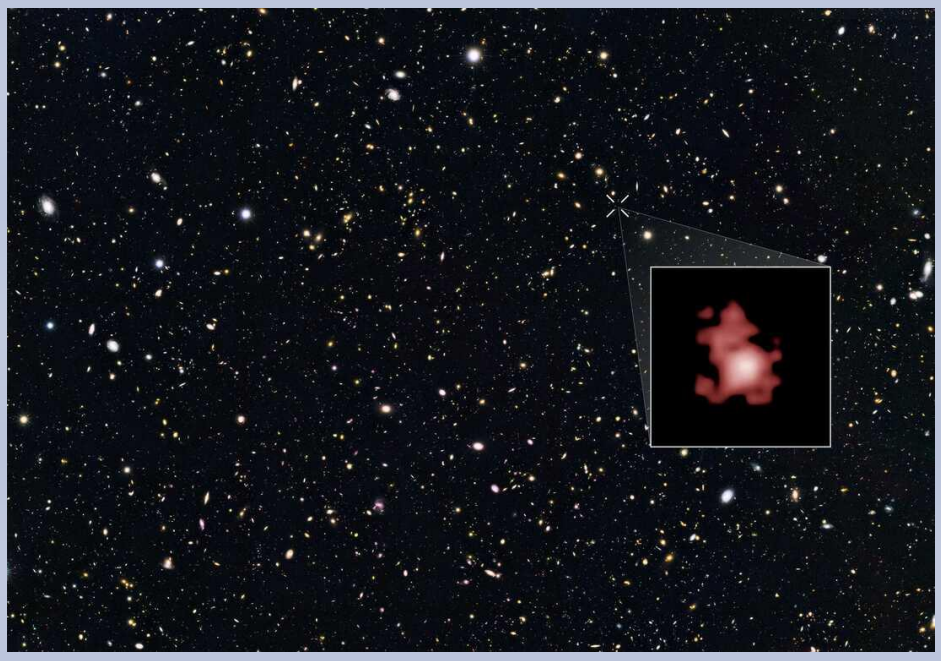
Space Exploration News



So, the Lunar Landing score in this rush is Russia 0, India 1, United States 0, as the Perigrine Lander was successfully launched into Trans-Lunar Injection by the brand new Vulcan-Centaur rocket by ULA on its first launch ever. Unfortunately, upon separation from the Centaur second stage right after TLI, Perigrine suffered an oxidizer leak due to a (you guessed it) a stuck valve. Heroics by contractor, Astrobotic, which put on a tremendous show of open communications, has extended the mission from its initially expected life expectancy of about an hour to still flying as of January 17. It is presently in orbit around both Earth and the Moon. After swinging by the Moon, Apollo 8 style, it's on course to end its life in fiery reentry to Earth's atmosphere on January 18. Next try in this season of landings is by Japan, whose SLIM lander will try in the next several days. It has not been an excellent season for Moon landings this winter.

The Internet is ablaze with proclamations that the James Webb Space Telescope has detected life in the biosignature of an exoplanet. Well, there may be smoke, but there is no fire there. When you see a title or headline that ends with a question mark, the answer is invariably, "NO!" That's Betteridge's law in case you wish to cite it. When such wolf-calling is noticed you go-to is

astrophysicist Dr Becky Smetthurst of the University of Oxford, Christchurch. In this short video from YouTube, she lays it on the line. No, JWST has not discovered aliens… In the description she elaborates, “Just clarifying some comments I made in an earlier video that got picked up and twisted by UFO enthusiasts and then again in the media! Remember, any future claims of a potential biosignature detection of a molecule in an exoplanet atmosphere means it could be due to life but also could be unknown chemistry. The jump from there to aliens is ridiculous and what's more, it's bad science communication.” And how! It’s unfortunate that sloppy journalists and UFO enthusiasts are discrediting the real search for ET by scientists, at least as far as the public is concerned.



Speaking of Cambridge University, University of Cambridge Department of Physics and team leader Roberto Maiolino are using James Webb Space Telescope to answer questions of how super massive black holes formed in the universe, when and how. So, they sighted a galaxy, GN-z11, 13.4 billion light-years away, the furthest and earliest galaxy containing a super massive black hole about 6 million times more massive than the Sun. We are seeing it as it was only 400 million years ABB (After the Big Bang) and previous theories (the only ones we have for now) say that’s impossible. It is also ingesting matter from its galaxy five times faster than present theories say is possible. Far from answering questions here, JWST has just injected a whole list of new questions. Again, and I hate to be a broken record, your go-to expert would be Dr Becky Smethurst of Cambridge University and her video JWST & the BIG DEBATE on GN-z11: one of the most distant galaxies in the Universe. Hang on folks, this ride is going to be a mite bit bumpy!

2023 Annual Observing Report

By Wayne Frey

I have been documenting my observations since 2009 so it is only natural to look back at the end of each year to see how the year went (observing only). It lets me compare the past year's observing conditions with previous years. Starting in 2015 conditions have been going down hill for observing. I can attest to the growing light pollution and climate change being the two biggest factors in the lack of good observing nights. There have been more cloudy nights with the passing of each year since 2015 and brighter clouds due to light pollution. By 2020 I could not longer observe much from my backyard. Only stars and star clusters could be seen through my visual telescopes.

That all changed in 2022 when I purchased an EAA (Electronic Assisted Astronomy) camera for the telescope. It was a hastle setting up the telescope for imaging because it has to be very precisely polar aligned. I could now see galaxies and nebula from my backyard again. Then in late 2022 I purchased a self contained EAA scope. I had no more lengthy set up or cord management problems. Just turn on the telescope, do a quick calibration and send it to an object. It only takes a matter of minutes instead of an hour to set up. Due to a lack of clear nights like we use to get, now we only get hours of clear sky. This quick set up allows me to take full advantage of those brief clear hours.

Because of this, I have done 90% of my observing from the backyard. As a result, I have surpassed the number of objects observed from previous years. I no longer count the clear nights, instead, I count the hours of clear skies. Below is a summary of the hours for each month along with the number of observing sessions and objects observed during those hours.

January: 81 hours in 21 sessions 185 objects. This is the second best month for 2023.
February: 27 hours in 7 sessions 55 objects. This is the second worst month for 2023.
March: 43 hours in 13 sessions 70 objects. Most are new to me never before seen even at a dark sky site
April: 33 hours in 8 sessions 64 objects. Many of them 10 – 17 magnitude
May: 36 hours in 11 sessions 92 objects.
June: 46 hours in 13 sessions 69 objects. Now finding very dim H II regions, many to large for scopes Field Of View (FOV).
July: 9 hours in 4 sessions 43 objects. The worst month for 2023.

August: 72 hours in 17 sessions 187 objects. This was the best month as I'm now finding galaxy groups & clusters.

September: 46 hours in 12 sessions 117 objects. Like Hickson Compact Galaxy groups with 3 to 6 galaxies, published (1994).

October: 44 hours in 10 sessions 118 objects. Looking at Arp pecular galaxies published in (1966). He used images from the Palomar 200 inch telescope. I am using a 4 inch with amazingly similiar results.

November: 44 hours in 8 sessions 111 objects. Finding Abell Galaxy Clusters (ACO), Amazing that I can see images close to what he imaged with the UK 1.2 meter Schmidt telescope in 1958. Each cluster had to have 30 galaxies or more. The last one I did (ACO 407) had 46 galaxies...I could only see 27 of them. PGC 2071053 at 16.75 magnitude was the dimmest.

December: 39 hours in 6 sessions 98 objects. The end of 2023 observing year.

TOTALS: 520 hours in 130 sessions 1209 objects. That is fifteen weeks at 40 hours each. Yes I am retired or I would not have that much time to observe. The sessions ranged from two hours (shortest) to ten hours (longest). Yes the teleescope is remotely controlled so I can sit inside where it is climate controlled. I observed 1209 objects with less than 10 percent being duplicates which mean over a thousand new objects for me.

I hope you all made the best of our climate changing weather and made enough observations to satisfy your interest in astronomy this last year.

SPAC Image Gallery

Here are some excellent astrophotography highlights from our fellow SPAC members. Anyone who would like to share his or her work, I encourage you to email the editor to submit for future newsletters or share them on our SPAC Facebook page.

Above: **Rosette Nebula by Bob Mizell**

Left: **The Soul Nebula by Joe Canzoneri**

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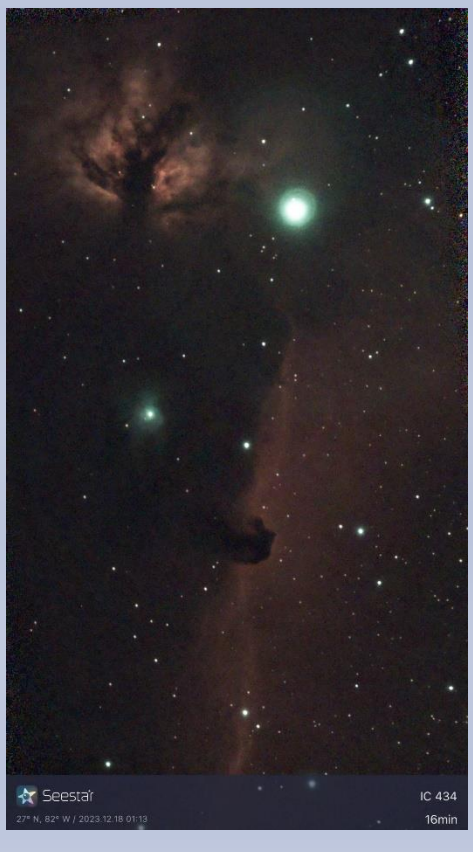
Below: The **Flame and Horsehead Nebulae,** the first image is right out of the camera. The second two are photoshop enhanced using Neil Carboni's Astronomy Tools plug-in. Only 16 minutes of exposure. I went longer however there were satellite trails.

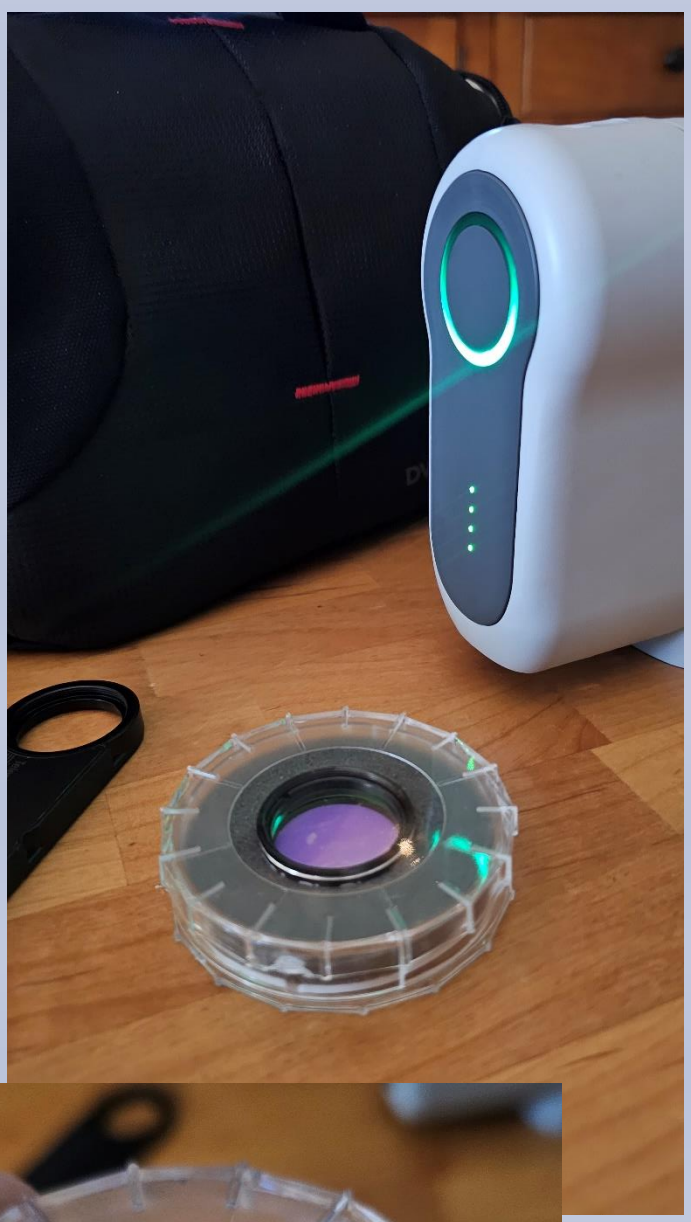
I take a snapshot every 5 minutes from the SeeStar then press continue. Then at 10 minutes I take another snapshot. You get the idea. At 20 minutes there was a major satellite trail, thus I used the 16 minute image in this case without any satellite tracks. If I took one snapshot in 30 minutes there would have been major trails **by Greg Shanos**



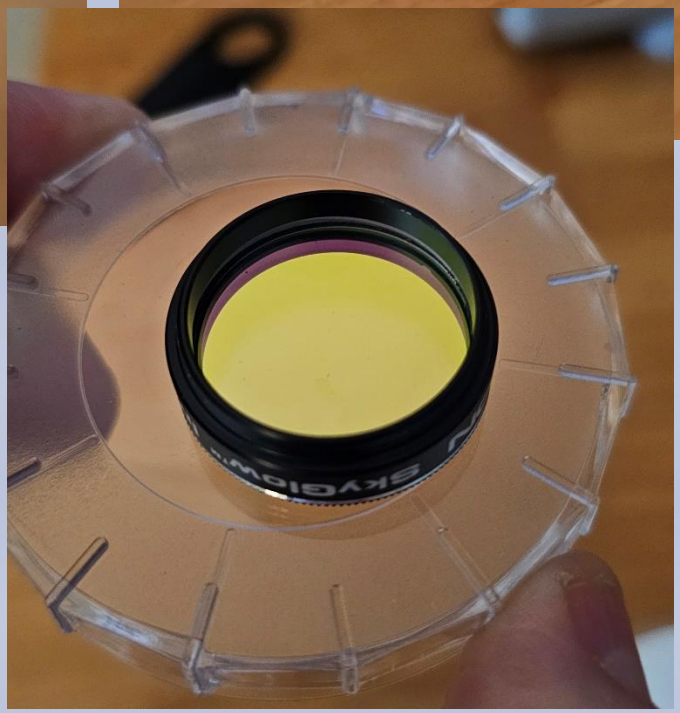
For Sale

Listing #1: Dwarf 2 Classic and accessories for sale. Setup includes the Dwarf, the soft-sided carrying case, tabletop tripod, rechargeable battery and 64 GB SD card. Additional purchases included are the magnetic filter holder and an Orion 1.25" Skyglow Imaging Filter. All are in like-new condition. Asking $420 for complete setup (current new pricing is $459 Classic Dwarf + $20 magnetic filter adapter + $100 imaging filter = $579 new). If interested, please contact **Guy Earle** at mileslegionis@verizon.net or 813-785-1972


DWARF LAB

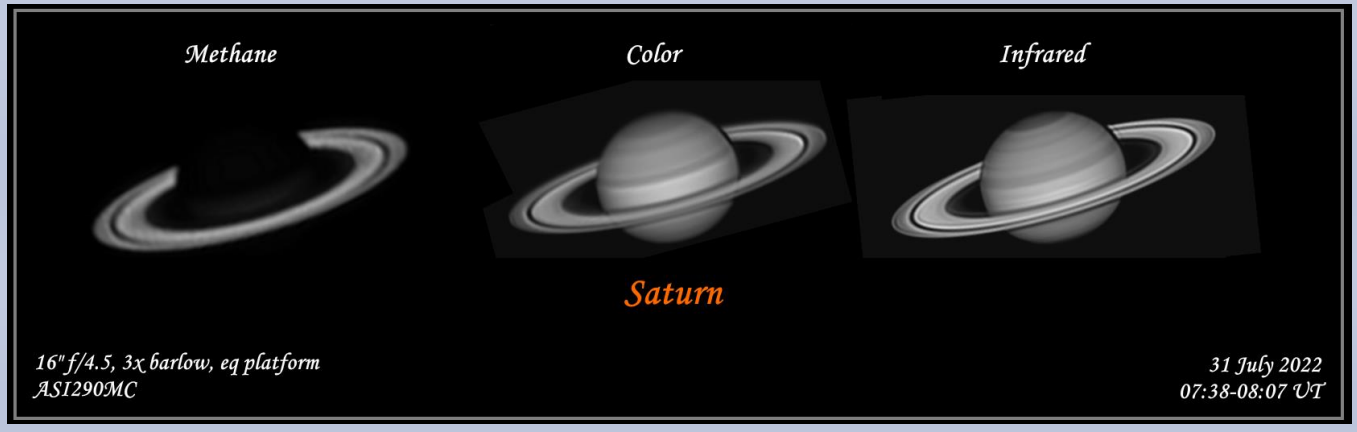



Glow™ Imaging



Listing #2: ZWO ASI 290MC color imaging camera, I used it for planetary but can also be used for introductory deep sky and guiding as well. The camera comes with the USB 3.0 cable, 1.25” cover and additional 1.25” low-profile nose piece. Asking $150 and photos taken with 290 on following page. If interested, please contact **Guy Earle** at mileslegionis@verizon.net or 813-785-1972


Mercury
July 25, 2023
6.08" / Mag. -0.15
Venus
June 09, 2023
24.82" / Mag. -4.33
Mars
January 04, 2023
14.24" / Mag. 1.12
Jupiter
September 16, 2023
45.92" / Mag. 2.71
Saturn
August 10, 2023
18.79" / Mag. 0.49
Uranus
September 16, 2023
3.67" / Mag. 5.68
Neptune
November 02, 2022
2.34 arc seconds


Methane
Color
Infrared
Saturn
16" f/4.5, 3x barlow, eq platform
ASI290MC
31 July 2022
07:38-08:07 UT

Listing #3: Celestron Neximage 10 planetary 10-megapixel imaging camera with built-in IR filter and USB 3.0 cable. It has a very large imaging area and is great for whole lunar, solar, and planetary imaging. Asking $110. If interested, please contact **Guy Earle** at mileslegionis@verizon.net or 813-785-1972

Listing #4: Celestron X-Cell 3x Barlow I have for sale a barely used Celestron X-Cell 3X Barlow. It comes with the original box with caps and the optics are clean. Asking $55. If interested, please contact **Guy Earle** at mileslegionis@verizon.net or 813-785-1972

SPAC Business Meeting

Our next business meeting is **Wed., Feb. 14th, at 8:00 PM** via conference call; details upon request. All interested members are invited to attend. All club business decisions are made at the business meeting so as not to encumber the general meeting.

Officers & Directors

President	Mike Partain	850-339-0828
Vice Pres.	Guy Earle	813-785-1972
Secretary	Shirley Vuille	727 864-2624
Treasurer	Jim Hunter	813 507-8415
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Dir.-at-Large	Jack Fritz	727 692-9831
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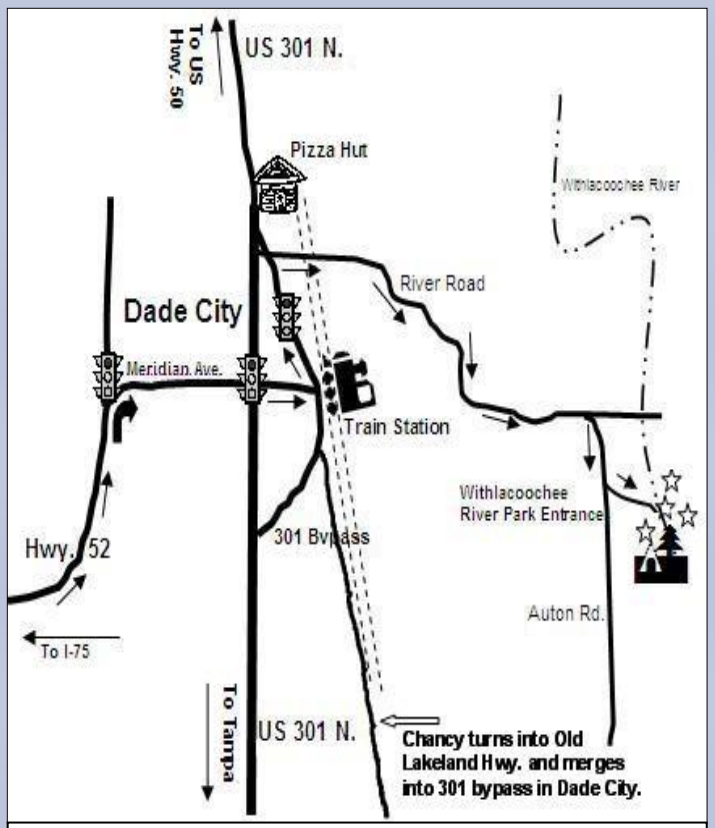
Outreach Chair	Jim Hunter	813 507-8415
Star Party Chair	Mike Partain	850 339-0828
Librarian	Ralph Craig	727 384-2086
Club Webmaster	Jack Fritz	813 508-5680
Dark Sky Chair	Leeann Muszynski	813-601-0986

Click on the name to send email



Withlacoochee River Park – Dade City, FL
Detailed directions can be found at:
www.StPeteAstronomyClub.org

Withlacoochee New Moon Weekends

There's no need for reservations. However, the park closes at sundown, so you will need to arrive before then. The park rangers will give you the gate-code once you're inside the park. Please do not call for the gate code as they are not allowed to give it out over the phone.

Reservations are not necessary. Please print and display our Friends-Of-The-Park Pass on your dashboard.

Please join us! All astronomy enthusiasts are welcome. You do not need to be a club member to attend. Please refer to our Club Calendar for details and scheduled dates.

St. Petersburg Astronomy Club

Recognition of Patrons & Benefactors

Lakeisha & Stephen Black	Benefactor
David Brewer	Benefactor
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Dave & Deborah Catalano	Benefactor
Stephanie Colon & Ariel Grajales	Benefactor
Jack & Roni Fritz	Benefactor
Michael Haworth & Melanie Otte	Benefactor
Valerie Hyman	Benefactor
Naseeb Nas Kaleel	Benefactor
Jamie Kenas	Benefactor
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Laura & Roy Lanier	Benefactor
Greg Legas	Benefactor
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Doug and Teri Sliman	Benefactor
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**********	
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Elizabeth Wood	Patron

St. Petersburg Astronomy Club Membership Form

Membership in St. Petersburg Astronomy Club, Inc. (SPAC) is open to anyone, regardless of age, who is interested in astronomy. Benefits of membership include a monthly subscription to the SPAC Examiner newsletter, reduced camping rates and use of the club's bunkhouse at our dark sky site at Withlacoochee River Park, the ability to serve on the SPAC board and voting privileges. Dues are considered donations and are non-refundable. Membership options are available as listed below.

You are now able to choose how you wish to join or renew your membership:

- **Preferred On-line Website Option: New instructions as our website has been updated.**

Go to https://www.stpeteastronomyclub.org/Sign_In.php on the SPAC website where you can join, view and update your membership profile, provide payment, and **print your membership card**.

- **US Mail Option: Takes more time to process manually because we are all volunteers.**

Complete the attached membership form and send it along with your payment to:

Jim Hunter
17316 Oak Ledge Drive
Lutz, FL 33549.
(Checks should be made payable to SPAC, Inc.)

Adult 1: _____ Adult 2: _____

Street: _____

City, State, Zip: _____

Home Phone: _____ Cell Phone: _____

Email Address: _____

Number of Children under 18: _____

Memberships:

Single: [ ] $ 30.00/YR. Includes one adult, minor children, the "SPACE" newsletter, and all the rights and privileges of membership.

Family: [ ] $ 35.00/YR. Includes two adults, minor children and the above rights and privileges.

Patron: [ ] $ 50.00/YR. A Patron member is entitled to the above rights and privileges.

Benefactor: [ ] $100.00/YR. A Benefactor member is entitled to the above rights and privileges.

Student: [ ] FREE. SPAC offers free membership to full time high school and college students.
Expected date of graduation: _____

Total Submitted: $_____

Your SPAC Membership Card is required for reduced fees at the campground.