SPACE

St. Petersburg Astronomy Club Examiner

July 2025

Editor – Guy Earle

The St. Petersburg Astronomy Club has been the center of family astronomy in the Tampa Bay Area since 1927. Our 314 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:

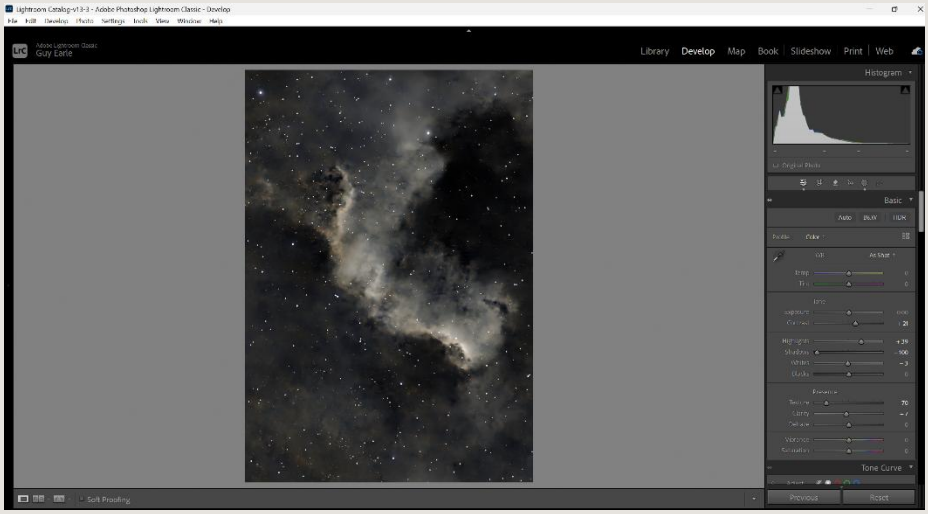
Southern sky perennial favorites NGC6559 Chinese Dragon, M8 Lagoon and M20 Trifid Nebulae in the direction of the Constellation Sagittarius. Wideband LRGB image captured from Chiefland Astro Ranch with the William Optics GT81 and the ZWO ASI2600MM camera, by Jamie Kenas

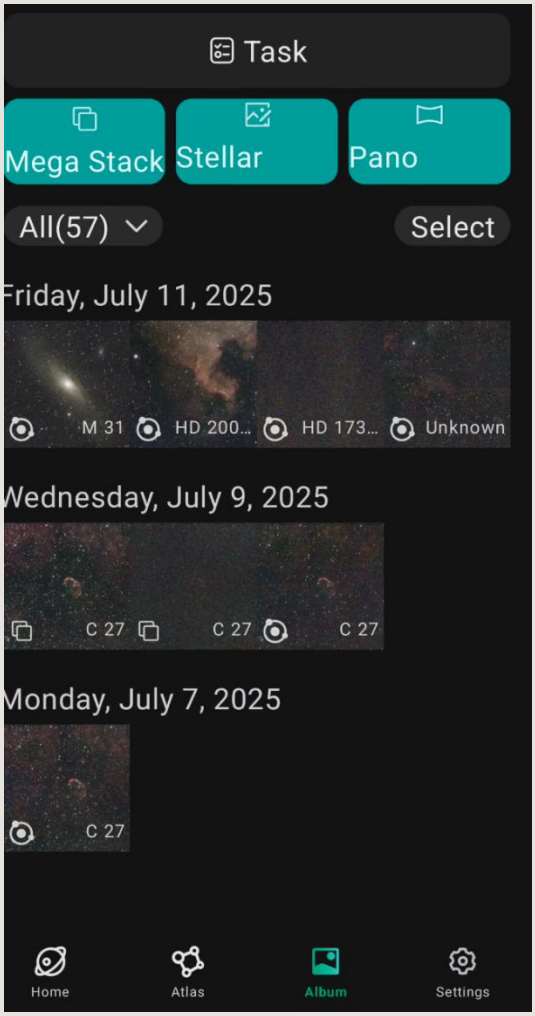
August Preview

This month SPAC is having the meeting via Zoom only due to the college closing early during the summer months. The link is on the next page.

Bob Stelmock will be doing his smartscope presentation in the future when the weather cooperates. So, I thought I'd take the opportunity to share some video of how the Dwarf 3 uses the Stellar Studio function as well as some other tips for post processing, like Lightroom Mobile.

As for our **August General Meeting**, SPAC members are invited to partake in a social event to gather and reconnect. Location TBA but will be the same date.





July General Meeting

This month's general meeting will take place on **Thursday, July 24th at 7:30 PM** via **Zoom only**. We will *not* be meeting at SPC.

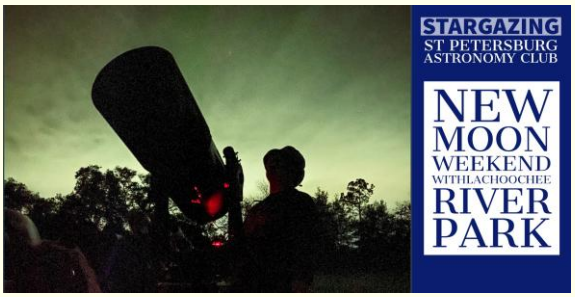
This month, **SPAC member Guy Earle** will be presenting: **Using Your Dwarf: Stellar Studio and Other Processing Methods.**

Join Zoom Meeting **HERE**

Meeting ID: 834 8435 3027

Passcode: 092807

The club's **New Moon observing weekend** is on July 25th & 26th at Withlacoochee River Park east of Dade City.



New SPAC Members

We would like to welcome Marty Anderson, Linga & Moitreyee Reddy, and Alex Retana to our family of members.

Examiner Staff

Editor	Guy Earle
Space News	Steve Robbins
Field Reporter	Kelly Anderson
Mirror Lab	Ralph Craig
Image Gallery	Peter McLean
Mirror Lab	Mike Davis
	Allen Maroney

President's Message

MIKE PARTAIN

Well, we appear to be having yet another wet summer all around the country. I've seen several of our members braving the weather and posting their astro images on Facebook. Florida summers can be very fickle for those stalwarts who are determined to take astro photos.

The board continues to work on improving the innerworkings of the club and we continue to receive some unexpected and unplanned challenges, Last year, it was flooding from the hurricanes. This year, we were hit with an unexpected announcement from St. Petersburg College that our room rental rates for our monthly meeting will be significantly increased beginning in January 2026. Last month, Peter McLean presented a mini-class on Pixinsight processing for astro images. Peter's class demonstrated one of the more powerful benefits of our club: networking and collaboration. Even visual observers like myself learn from meetings like this. For my part, I found a new sky atlas (Astrophotography Sky Atlas by Charles Bracken) that I can use with my night vision astronomy....it was ordered while Peter presented! According to Peter, "sharing tips and tricks is fundamental in this craft today and quickly changes with each passing month." The goal is to make the complexity of programs like Pixinsight processing tools easy to understand for our members.

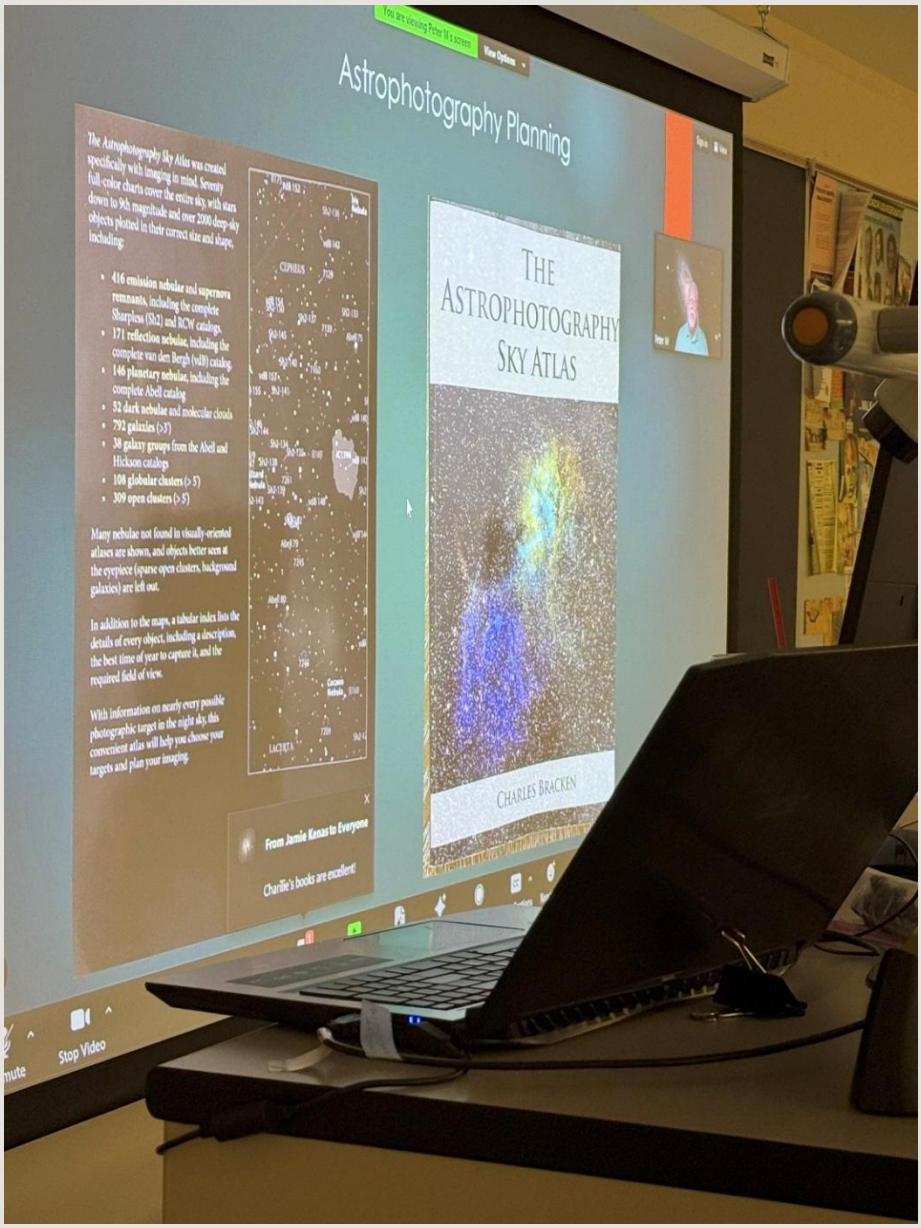
Last week, the board held our monthly business meeting and we discussed the issue of the increased fees for our monthly meetings. The board decided that we will begin the transition from in person monthly meetings to Zoom meetings for our presentations. This means that at least 7 of our monthly meetings will be on Zoom while the remaining meetings will be pre-arranged socials to give our members the opportunity to meet and greet at a local restaurant or our annual holiday gathering. As part of our effort, we will also seek to revamp our website to modernize it and allow more capabilities to enhance our ability to provide meaningful benefits for our members. We hope to have our plans in place over the next several months.

Lastly, I would be remiss if I did not highlight our Mirror Lab. Last month, when I was at Cherry Springs, I had several people come up and ask me about my 16-inch Dobsonian telescope. When I described how it was made with the help of the club's Mirror Lab, the reply on everyone's lips was "your club can make telescopes?" While the answer is yes, we do, but the fact remains that our Mirror Lab is homeless. This is a problem that we must find a way to solve. The main issue is real estate and rent. If anyone knows of a potential place we could use, please reach out to me to discuss.

Mike

June General Meeting Recap

Thank you to Peter McLean for doing a great presentation on Pixinsight processing and planning your sessions at our June meeting. As Mike said above, there was a ton of useful information and stressed the connectivity that needed for our club. As for myself, I unfortunately wasn't able to attend the meeting but we'll have that file uploaded for members soon, so people like myself can give it a watch. Thanks for stepping in, Peter!



SPAC New Moon Weekend

Field Report

June 20th-21st, 2025

By Substitute Intrepid Field Reporter

GUY EARLE

Our Intrepid Kelly Anderson is still doing some travelling with his lovely wife, Natalie, so I'm stepping in for one more month. Not that there's a whole lot going on, thanks to the weather. I don't know about you, but it's gotten under my skin lately that the beautiful summer sky is mostly hidden from Floridians due to the nasty weather. When the sky is clear, IF the sky is clear, then there's the heat, humidity, and mosquitoes. For visual astronomy in Florida, the highlights of the summer Milky Way are things you catch in October when the weather shifts, the skies get clearer, and standing at the telescope is so much more enjoyable. I'm frankly quite envious of those living up north where summer nights mean having to grab a light jacket.

That rant being over, I don't think anyone was at WRP for June's New Moon weekend. Attendance is usually sparse from June through August because of what I said above, and if I remember correctly, it was actually raining those New Moon nights. However, it did look pretty good a few days later, so I reached out to Ranger Stephanie at Alafia River State Park and asked if I could come by that Monday night, since my work didn't have anything pressing the next morning. I have zero southern skies at my house in Riverview, and with Alafia being only 17 minutes away, it was enticing since the site has really good southern horizons. The south looks towards Lake Manatee Lower Watershed and Myakka River State Park. I honestly think, despite being in the outskirts of Tampa, the view from Alafia to the south is better than Dade City these days, since from WRP you're actually looking towards Tampa. My house has pretty good

Looking due east from the front field, horse barn on the

northern skies, and anything that comes up near due east can be imaged all night until about 30 degrees in the west, but not to the south where houses and trees block the skies.

Looking south with good horizon lines; the horse barn is off to the left.

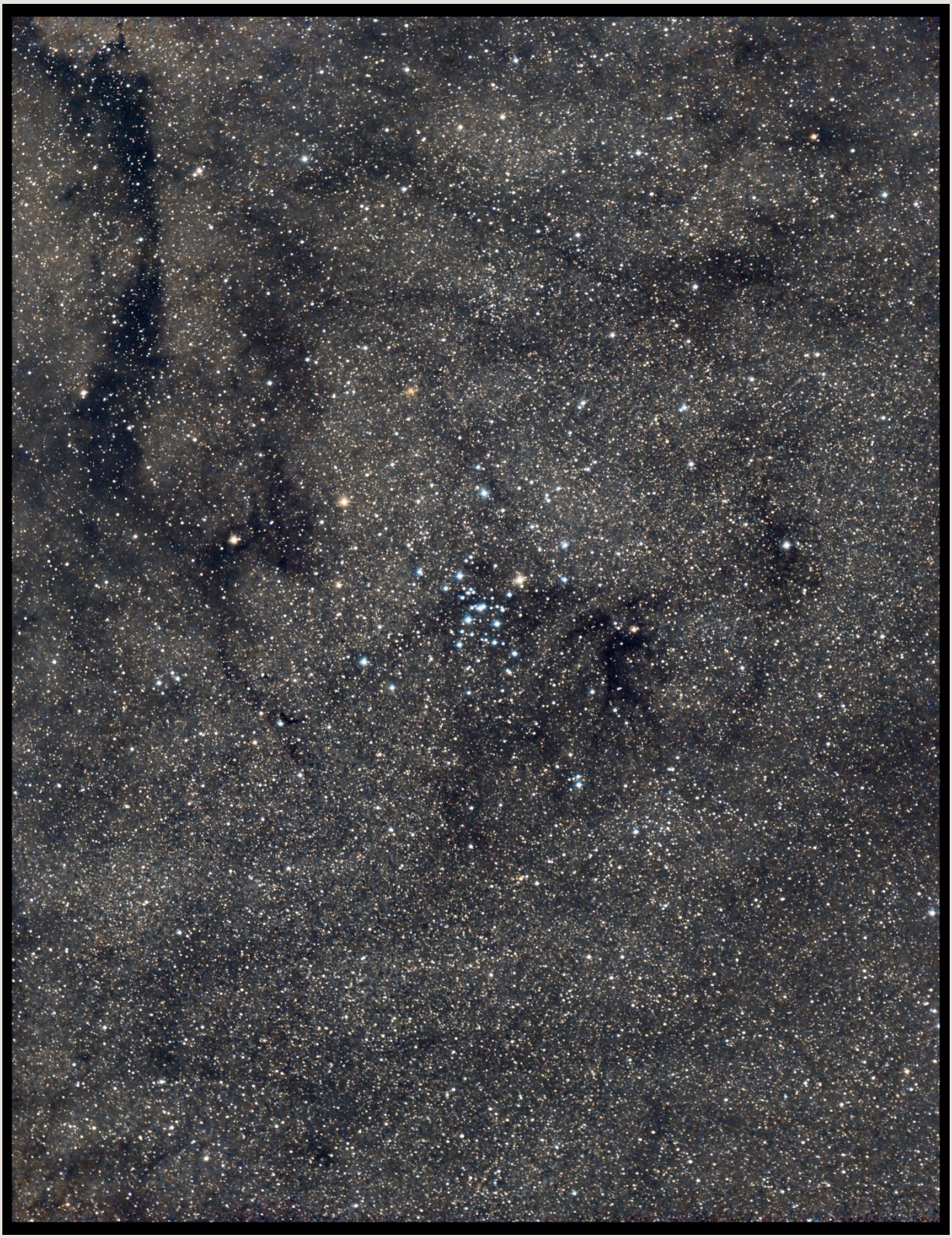
Now, fair warning, if you ever plan on going to Alafia anytime during mosquito season, be prepared. They swarm—hard, even by Florida standards. The agreement that SPAC has with Alafia is to drop scopes by the horse barn for no charge (if you know about Florida State park fees and reservations, you know that's a big deal). Any SPAC member that wants to go outside of the established New Moon weekends needs to contact me, and I'll help relay with Ranger Stephanie since I'm the point of contact. So, my plan was to drop the Seestar s50 and my Dwarf 3 and then retreat back to my car and the air conditioning. I knew that running out to adjust for equatorial alignment at sunset meant being swarmed by mosquitoes—always the worst when the Sun goes down—and it was very likely that some would get back into the car. As you see, I planned for that by bringing my bug zapper. Plugging it into my 12v car outlet did a marvelous job of clearing them out. It wasn't perfect, because as soon as I'd turn the car off for a bit, the buzzing would start, ending with me smashing a few into my windows or worse, my car lining. Both scopes ran from about 9:30 until I called it quits around 1:45, as I was waiting on a mosaic of M7 to finish (see page 9).

Planning on not using any power, I had a 10,000 mA battery velcroed to the leg of the tripod of the D3, and had Allen Maroney's battery holder on the s50 with another of the same battery, giving me plenty of power for an extended session.

This is what makes this smart scope revolution so game-changing, the convenience. My pack-up was all of three minutes at most, with the D3 on a regular camera tripod, so snapping the legs together and I was done. The s50 was on a Celestron AVX tripod that required unscrewing the spreader tray underneath and taking disengaging the s50 from the wedge, but that took only a few moments. By that time of the evening, the mosquitoes had settled out and didn't give me much trouble. If I had a full imaging or visual rig setup, it would have taken far longer to break down and pack up the gear. I think that's also what is making the hobby, in some ways, more difficult to get together. It's easy now, for people like me or beginners in imaging, to do it from home when in years past when visual was the only option for most of us. And you had to go to the dark sky site to see anything faint, leaving imaging to the realm of the semi-professionals, who had big setups that were out of a price point or experience of most people. The hobby is rapidly changing these days, but it always has, so the amateur community has to change with it.

Here's a few photos of what was imaged that night.

Antares and M4 (above) and Lagoon and Trifid Nebulas (right)

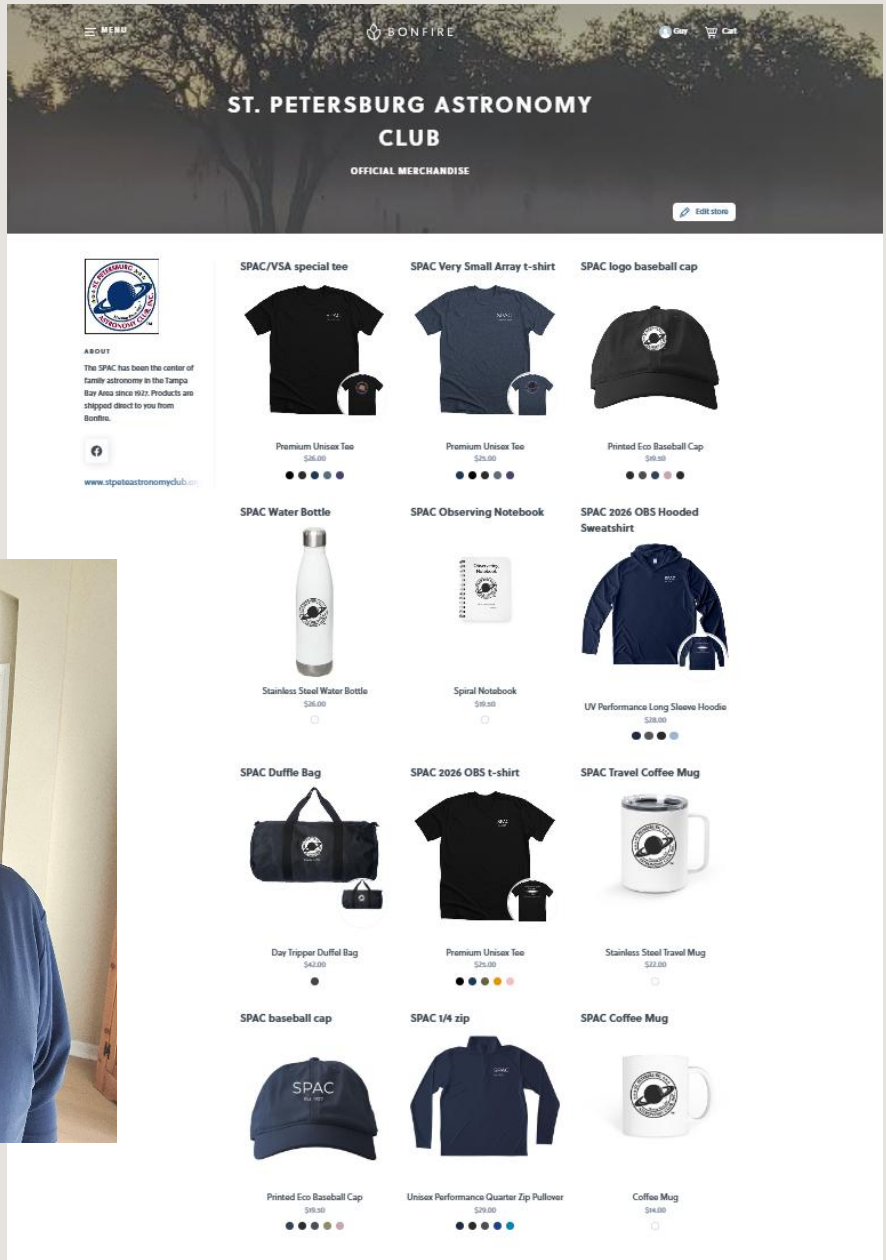


M7, taken with the Dwarf 3 in mosaic mode. M7 is an open cluster within the densely star-filled section of Scorpius. The image is rotated 90 degrees so you can see the maximum view for your screen.

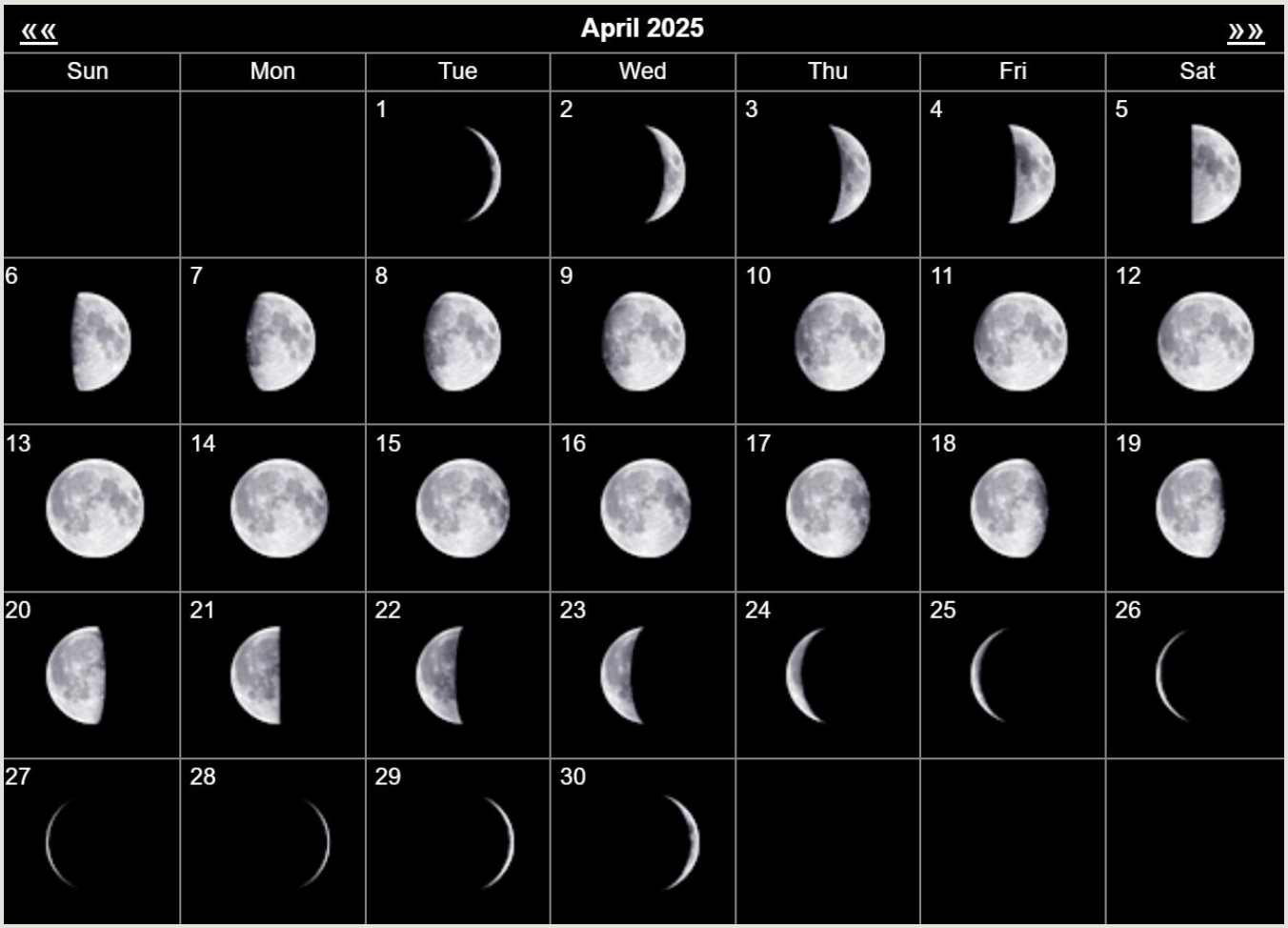
SPAC merch now available!

SPAC has partnered up with the non-profit merchandise website, Bonfire, to sell clothing and other swag, so now you can proudly show off your club spirit. We have various clothing items, such as hoodies, t-shirts, and quarter-zip pullovers. We also have hats, mugs, both traditional and travel, and other swag like duffle bags water bottles. Click HERE to go to our page. I'll be adding stuff in the coming months, so keep this website marked.

We already have our 2026 OBS t-shirt for purchase, which will be our new method starting this year, instead of ordering in batches. Like all the other merchandise, place your order and it will be shipped directly to you!



August Lunar Calendar



First Quarter August 1

August 1, the Moon will be at Apogee: 404,164 km from Earth

August 4, Antares will be .6° north of the Moon

Full Moon, August 9

August 11, the Moon will cross the celestial equator going northward at the Ascending Node

August 12, Venus will be .9° south of Jupiter

August 12, Saturn will be 4.0° south of the Moon

August 12 is the peak of the normally great Perseid Meteor Shower

August 14, the Moon will be at Perigee: 369,287 km from Earth

Third Quarter August 16

August 16, the Pleiades will be 0.9° south of the Moon

August 19 Mercury will be at Greatest Elongation, 18.6° west of the Sun

August 19, Jupiter will be 4.8° south of the Moon

August 20, Pollux will be 2.4° north of the Moon

August 21, Mercury will be 3.7° south of the Moon

New Moon August 23

August 24, the Moon will cross the celestial equator going southward at the Descending Node

August 24, Mars will be 2.8° north of the Moon

August 27, Spica will be 1.1° north of the Moon

August 39, the Moon will be at Apogee: 404,552 km from Earth

First Quarter August 31

August 31 Antares will be .7° north of the Moon

Space Exploration News

STEVE ROBBINS

Sneaking quietly under the radar, privately funded Axiom Space has been giving space programs of countries which have never been to space the opportunity not only to go, but to be an important part of ISS research. Just returned to Earth is the Axiom-4 mission, led by former ISS astronaut and director of Axiom Space's human flight program, Peggy Whitson, from India, pilot Shubhanshu Shukla, from Hungary, mission specialist Tibor Kapu, and from Poland, mission specialist Sławosz Uznański. This is no token diversity, this is diversity of the most qualified, giving space agencies of the world the opportunity to be meaningful. Axiom Space's long-term goal is to construct a privately funded space station, initially attached to ISS.

Surely you have seen the illustrations showing how crowded orbital space is, usually accompanied by articles claiming the sky is literally falling. Then it gets more alarming with the inevitable graphic illustrating

overcrowding in geostationary orbit. WARNING: these graphics are very misleading and are telling you important untruths.

Let's examine the low orbit plot. Earth's diameter is 7,900 miles, 12,700 km. At that scale each dot representing as satellite is over a hundred miles in diameter. Were they plotted to actual scale, the satellites would be completely invisible. That's the reason they're plotted as dots. However, these dots are MUCH closer together in the illustration and occupy hundreds of times less space than shown. The takeaway is that satellite collisions are hundreds of times less likely than the illustration leads you to believe.

Although the problem isn't as great as the alarmists claim, Space junk is a problem. Insurance for a satellite is so expensive that only 300 of about 13,000 satellites presently in orbit are insured. Insurance companies believe that the trend is for legal liability for launch companies leaving any debris in orbit. SpaceX, as an example, has eliminated exploding bolts for deployment of cargoes and uses latch systems and springs to eliminate debris from its missions. But even SpaceX leaves junk in orbit, such as part of the **"trunk" of its Dragon space capsule** which landed in a farmer's field in Australia.

Managing aging satellites in space isn't just a problem, **it's a business opportunity**. Starfish Space will try to make history later this year by making the first privately funded docking between two privately funded satellites in Earth orbit. Their Otter Pup 2 will launch on SpaceX's Transporter 14 mission, scheduled for June 2025. If successful, this will open that way for servicing satellites to either permanently dock with satellites which are out of maneuvering fuel to become their new maneuvering motor, or actually refueling satellites on duty to extend their mission.

SPAC Image Gallery

PETER MCLEAN

Here are some excellent astrophotography photos from our fellow SPAC membership, shot from various locations and divided into categories similar to our annual star party imaging competition. If you would like to share your work, I encourage you to email Peter your image or share them on our SPAC Facebook page.

Nebula

M20 Trifid Nebula
by Ronald Collins
from Zephyrhills, FL

Sh2-129 Flying Bat and Squid Nebula
by Philip Roey
from Hoschton, GA

LDN1235 Shark Nebula
by Johnny White
from Zephyrhills, FL

NGC7023 Ghost Nebula
by Jamie Kenas
from Chiefland Astro Ranch, FL

Nebula

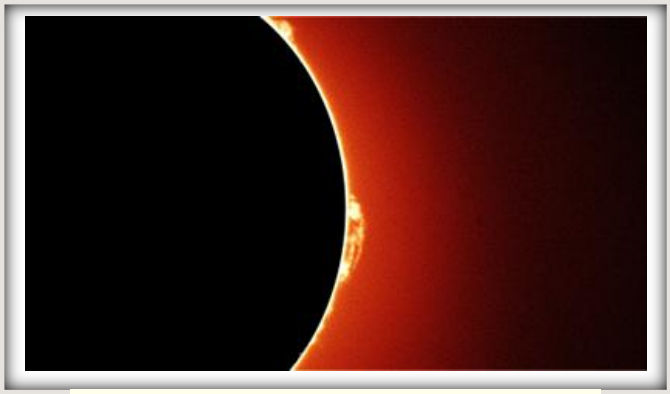
NGC6357 Lobster Nebula
by Johnny White
from Zephyrhills, FL

M16 Eagle Nebula
by Philip Roey
from Hoschton, GA

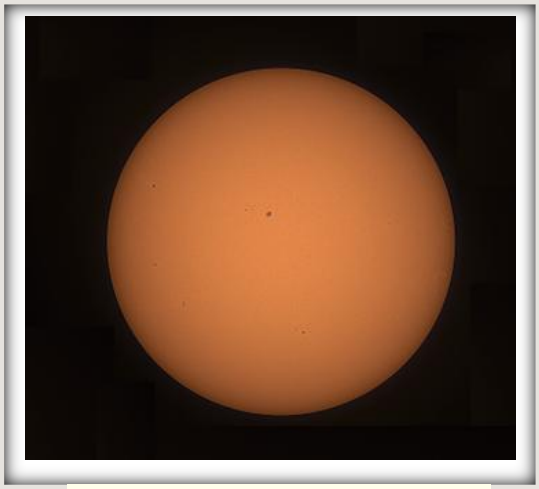
NGC7000 North American & IC5070 Penguin Nebulae
by Peter McLean
from Willow Oak, FL

NGC7023 Iris Nebula
by Jamie Kenas
from Chiefland Astro Ranch, FL

Planetary-Lunar-Solar

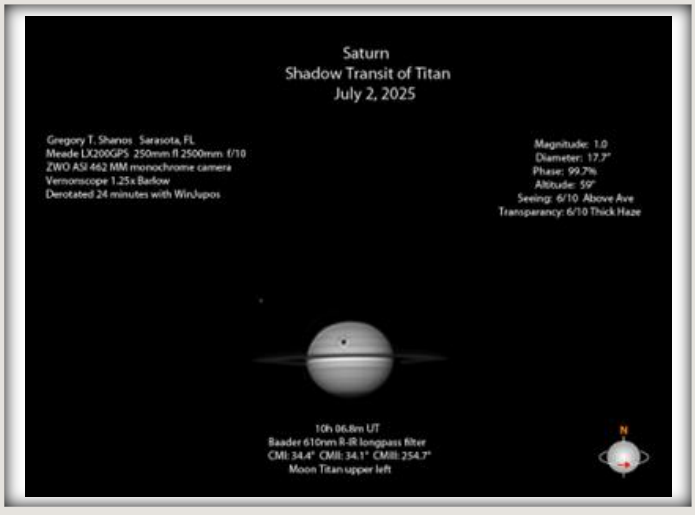


Solar Prominence
by Steve Maiaroto
from The Villages, FL



Hello Sunshine!
by Guy Earle
from Riverview, FL

Saturn
by Guy Earle
from Riverview, FL



Lunar Portrait captured with
vintage Hand ground mirror
by Steve Maiaroto

Smart Telescope

Dwarf III Image
M20 Trifid and M8 Lagoon Nebulae
by Guy Earle

by Joe Canzoneri
from Zephyrhills, FL

Dwarf III Image
NGC6888 The Crescent Nebula
by Guy Earle

Iris Nebula
by Ron Jones
from Tampa, FL

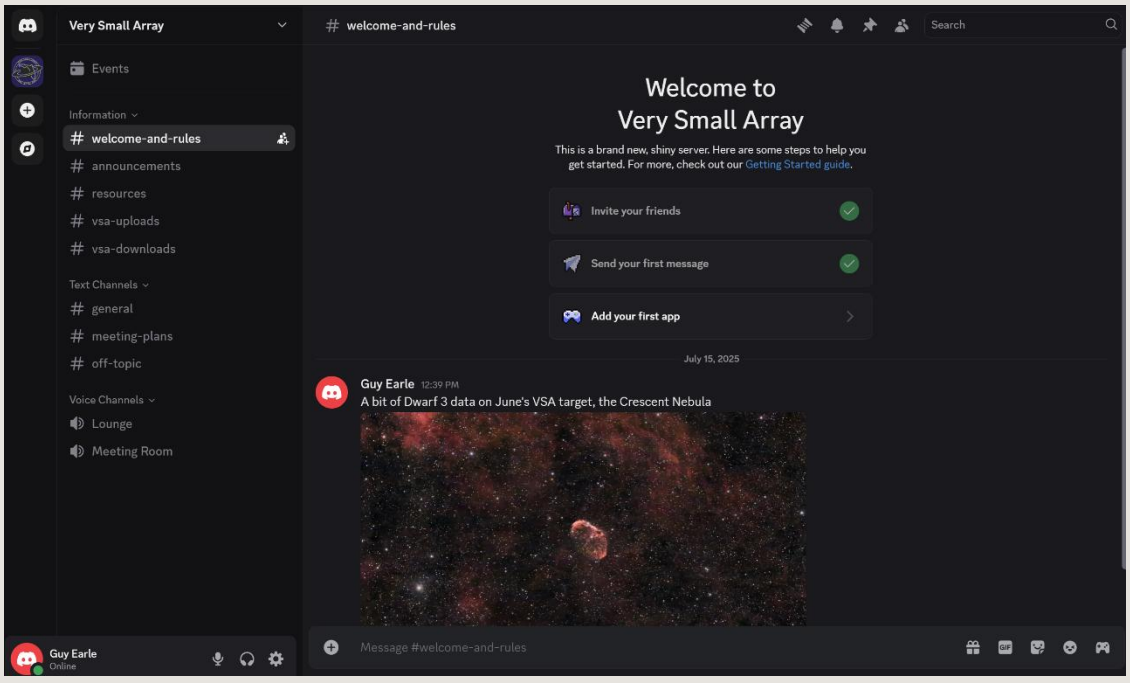
Talk with the VSA

GUY EARLE

The **Very Small Array**, thanks to Matthew Peters, is talking with clubs within Florida and even in other states that are interested or have already joined this burgeoning idea. Some VSA members have been uploading files to the Dropbox account, specifically set up to upload frames collected on our monthly targets. Accessing and organizing that Dropbox is in process, but it will serve a perfect platform for sharing both Dwarf 3, Seestar s50, and s30 data. July's weather has been absolutely wretched, so the VSA targets will be through August. They are: **for the Dwarf 3 and Seestar s30, Elephant Trunk Nebula (IC1396); for the Seesstar s50, the Wizard Nebula (NGC 7320),** no mosaic mode for any in order to not have framing issues.

In an effort to promote communication between members, Matthew and I have been trying to figure out an easy and very specific method. I tried setting up a Google Groups account, but that only sent emails back and forth, which is not what I was expecting. I wanted something that could be an online conversation that is not Facebook. Matthew has been in touch with other groups, who frequently use **Discord,** especially the recent members of the Howard Astronomical League, who have already started to join up. This allows members to communicate on topics in one stream, which is perfect for communication. There is also an app available to make it easy to work with on your phone.

If you wish to participate in the VSA, I highly encourage you to join HERE.



Above is the current logo for the Florida Chapter of the VSA. Last night, the17th, members of the Howard Astronomical League in Maryland joined our growing VSA on Discord. Each state will end up with its own corresponding VSA logo. The VSA is comprised of members who use ZWO's Seestar's or Dwarf Labs' telescopes. Again, thanks to Matthew and his connection with many other clubs outside of Florida, members now stretch across multiple states and continues to grow. The VSA is very much a work-in-progress, as we refine the upload and sharing feature of data as well as creating a way for members to communicate with Discord.

We also just put a **special VSA-SPAC t-shirt** up on our merchandise page. If you're interested in sporting your VSA tee at the next star party, click HERE to order. There are multiple sizes and colors available. An older, first run of the VSA shirts will continue to be available for a limited time.

The Vera Rubin Observatory

The truth is out there

STEVE ROBBINS

The Vera Rubin Observatory is the most important telescope on the ground or in space in all human history. Until now, the emphasis on big science observatories has been concentrated on high magnification views of tiny fields of view. Hubble's WFC3 camera has an FOV of 2.3 x 2.1 arcminutes. To cover the entire sky would require 24 million separate exposures. JWST's NIRCam's field of view is 2.2 x 2.2 arcminutes. Terrestrial professional telescopes include the Gran Telescopio Canarias with 7 x 7 arcminutes, which is typical. These are great for close studies of interesting objects, but how do they decide what's interesting?

That's where Vera Rubin comes in, a bird dog to flush the prey out of the vast expanses of underbrush. With an aperture of 8.4 meters It's the seventh largest telescope on the planet. But it's not made to conform. The Vera Rubin's designers were so far outside the box they could no longer find the box. Instead of a field of view of 1/30° the Vera Rubin gobbles up a 3.5° FOV with every single exposure. Its high speed slewing and ultra fast largest camera ever built can photograph the entire visible sky every three days, showing every bit of sky visible from its mountain, Cerro Pachón in Chile.

This will be done with the largest detector array ever built, a 64 centimeter across, 3200 megapixel, only part of a camera weighing 3 tons and the size of an SUV. All detectors are chilled to -100° C, the camera contains three giant lenses, the primary being 1.65 meters across, the largest lens ever produced for astronomy. It has filters to take photos of differing wavelengths of light. Each night, Vera Rubin will spit out 20 terrabytes of data each night. In one year, Vera Rubin will have produced more data than all the observatories on Earth since the beginning of time.

So how is that information going to do anyone any good? Obviously there will be too much for human analysis or even identification. With a time lapse movie of the entire sky every three days, millions of supernovae are going to be found, tens

of thousands of previously unknown solar system asteroids discovered, astrometry of tens of billions of stars recorded and that's just the beginning. So along with the most astounding telescope ever built is the most capable automatic detection and notification system. Transient events, which change over time, will be automatically detected, prioritized and sent as observing requests to all those other observatories better able to zoom in on the action. Vera Rubin will absolutely overwhelm the world's ability to respond to all the events that will be found. The sky will be a box of chocolates and we have no idea what we're going to get, only that it will be wonderful.

And don't forget about objects that don't move or vary in brightness. Accumulating the entire sky every three days, Vera Rubin is accumulating 120 whole sky images per year to stack! We are going to see the night sky in a way never imagined before.

The best single article on Vera Rubin I've found is **All-Seeing Eye** from Science magazine and it's just staggeringly excellent. You'll read it and wonder how I got away with covering so little of the magnificent scope of the Vera Rubin Observatory concept. This is truly the most important observatory on Earth or in space. It will tell the other telescopes where and when to look, making every telescope on Earth magnitudes more useful.

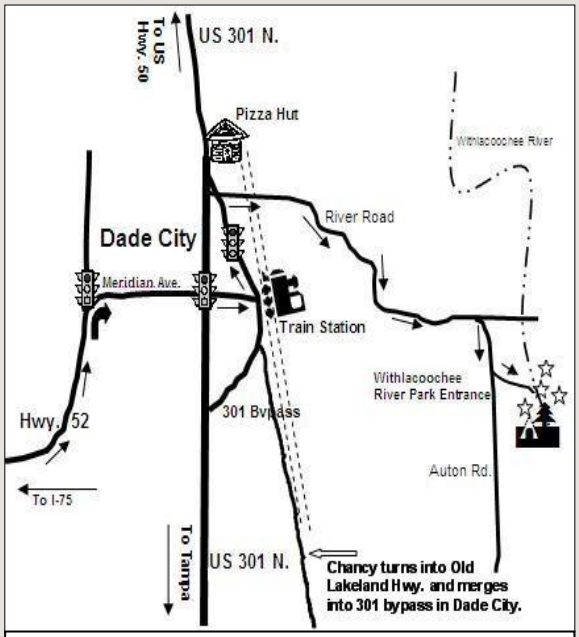
SPAC Business Meeting

Our next business meeting is **Wed., August 13th, 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
Vice Pres.	Guy Earle
Secretary	Peter McLean
Treasurer	Christian Rubach
Dir.-at-Large	Allen Maroney
Dir.-at-Large	Steven Gaber
Dir.-at-Large	Jack Fritz
SPACE Editor	Guy Earle
Public Relations	John O'Neill
Membership Chair	Peter McLean
Mirror Lab Chair	Paul McNabb
Outreach Chair	Steven Gaber
Star Party Chair	Mike Partain
Librarian	Ralph Craig
Club Webmaster	Allen Maroney
Dark Sky Chair	OPEN

Click on the name to send email



Withlacoochee River Park – Dade City, FL

Detailed directions can be found at:

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.

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. There is a small fee to the park for using electricity, reduced even further for club members, which you can pay on our club website **HERE**.

SPAC Recognition of Patrons & Benefactors

Walter Brinkman	Benefactor
Dave & Deborah Catalano	Benefactor
Stephanie Colon & Jack & Roni Fritz	Benefactor
Matt Hughes & Manuel Ordonez	Benefactor
Valerie Hyman	Benefactor
Craig & Roberta Jameson	Benefactor
Jamie Kenas	Benefactor
David Knowlton	Benefactor
Laura & Roy Lanier	Benefactor
Tod Markin	Benefactor
Kelly McGrew	Benefactor
Kevin & Karen Mulford	Benefactor
David & Kathryn Musser	Benefactor
Rath, Damon & Jean Futch	Benefactor
Mike Rozycki	Benefactor
Christian & Wendy Rubach	Benefactor
Doug and Teri Sliman	Benefactor
Garrison & Ruth Smith	Benefactor
Michael Strand	Benefactor
Jim & Robin Sumner	Benefactor
Aleksandar Trajkovic	Benefactor
Andrew & Bonnie Watts	Benefactor
Johnny White	Benefactor
**********	
Bill & Norma Amthor	Patron
Steven Balke	Patron
Michael Brennan	Patron
Michael Callahan	Patron
Ralph & Christine Craig	Patron
Glynis Dilaire	Patron
Peter & Jaclynn Dimmit	Patron
Guy & Kelly Earle	Patron
Joseph & Pamela Faubion	Patron
Darla & Peter Flynn	Patron
Steve & Cindy Fredlund	Patron
Steve Gaber & Karen Sell	Patron
Richard & Mary Garner	Patron
Timothy & Mary Ann Harris	Patron
Michael Haworth & Melanie Otte	Patron
Charlie & Linda Hoffman	Patron
Eric Houghton	Patron
Mark Kepka	Patron
Willy & Beth Lebihan	Patron
Dave & Mary MacKenzie	Patron
Steve & Jeri Maiaroto	Patron
Allen Maroney & Tracee Elliott	Patron
Ralph & Molly Merritt	Patron
Steven Miller & Lisa Alessi	Patron
Stephen Oros	Patron
Yervant & Jo-Ann Parnagian	Patron
Michael & Carli Partain	Patron
Brad & Lisa Perryman	Patron
Alan Polansky	Patron
Thomas & Leslie Salinas	Patron
Tom Spano	Patron
Jonathan Stewart	Patron
Tom & Michelle Sweet	Patron
Jose & Mary Torres	Patron
Alexie Velez & Yanira Hernandez-Velez	Patron
Skip & Kim Walker	Patron
Richard White	Patron
Shawn Wilson	Patron
Elizabeth Wood	Patron
Pete Zapadka & Amy Johns	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 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 view and update your membership profile, provide payment, and print your membership card.

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.