



SPACE

St. Petersburg Astronomy Club Examiner

September 2020

Editor – Guy Earle

The St. Petersburg Astronomy Club has been the center of family astronomy in the Tampa Bay Area since 1927. Our 271 adult members are dedicated to promoting and sharing the wonders and science of astronomy. We host dark-sky and local star parties, telescope-making workshops, science lectures, astronomy lectures, educational outreach sessions and much more.

Astronomy Humor

Because I think we could all use a good laugh.



Astronomy Image of the Month:



The Milky Way from Death Valley by SPAC member Antonio Paris on 9/12

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Brad Perryman, SPAC President

New SPAC Members

We would like to welcome Paul Smith, Jacobii Dau & Clifford McNeil, and Stephen Oros to our family of members.

September General Meeting

This month's general meeting will take place on Friday, September 25th at **8:00 PM**. The main program will be by Greg Shanos, who will be presenting, **"Mars 2020: An Observer's Guide"** and will include the following topics:

- Basic facts about Mars
- Orbits and distance
- Martian Features as seen from Earth
- Telescopic Visual Observations
- Drawing Mars
- Filters
- Webcam Astronomy
- Planetary Video Astrophotography
- Scientific value of planetary images

This meeting will be held virtually with **GoToMeeting.com**.

Please join from your computer, tablet or smartphone by clicking [here](#).

You can also dial in using your phone.
United States: +1 (786) 535-3211
Access Code: 192-720-429

October Astronomical Events

STEVE ROBBINS



Friday, October 2, Venus will be .6° north of Regulus and Mars will be .8° north of the Moon.

Saturday, October 3, the Moon will be at apogee, 406,300 km from Earth.

Friday, October 9, the Moon is at greatest northern declination, +24.6° .

Sunday, October 11, the Moon will be 2.2° north of the Beehive Cluster.

Tuesday, October 13, Mars is at opposition, having been the second brightest planet after Venus since Sept 24 in its best opposition since 2003. Watching Mars' south pole evaporate has been fascinating.

Friday, October 16, the Moon will be at perigee, 356,900 km from Earth.

Wednesday, October 21, is the Orionid Meteor shower with a ZHR of about 20, benefiting from a very young Moon setting early in the night. The Moon will be at its greatest southern declination, -24.7° .

Sunday, October 25, Mercury bucks the trend of planets in most favorable viewing position by being at inferior conjunction, closest to Earth, but between us and the Sun, lost in the Sun's glare.

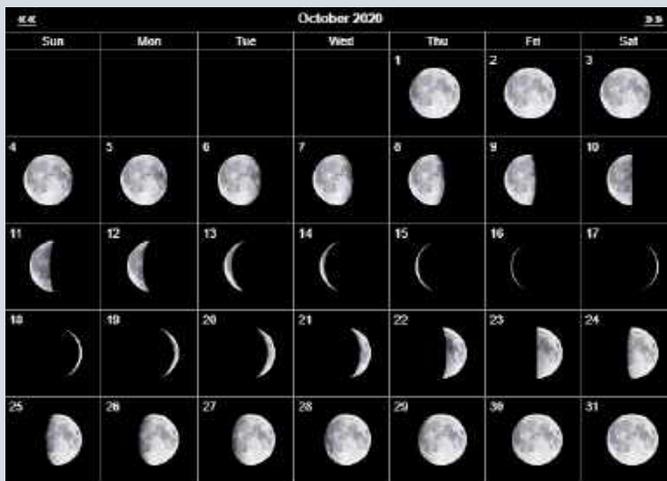
Friday, October 30, the Moon will be at Apogee, 406,400 km from Earth, making the full moon of October 31, nearly the smallest possible angular size.

Saturday, October 31, Uranus joins the superior planet ideal observation party and is at opposition.

October’s full Moon, being the full Moon closest to the autumnal equinox is called the Full Harvest Moon.

The Moon

- Full Moon – October 1
- Third Quarter – October 9
- New Moon – October 16
- First Quarter – October 23



The club’s next **New Moon observing weekend** will be held October 16th-18th at [Withlacoochee River Park](#).



Space Exploration News

STEVE ROBBINS

★ In one of the strangest recent findings is that the Earth is literally making the near side of the Moon rust. When NASA scientists analyzed data from India’s Chandrayaan-1 lunar probe, they found the surface littered with hematite, iron oxide! But the Moon has no atmosphere to oxidize the iron. They found that during the full Moon, ions stripped from Earth’s outer atmosphere strike the Moon. It appears that these oxygen ions interact with lunar water molecules to oxidize the iron. Full story at <https://www.cnn.com/2020/09/05/world/moon-earth-rust-intl-hnk-scli-scn/index.html>.

There is urgency at SpaceX. Less than a month after Starship SN5’s August 4 150m flight, SN6 took a similar hop on September 3. Watch them side by side at <https://www.youtube.com/watch?v=8ju3uJrKuBE>. Also in various stages of construction are Starships SN7, SN8 and SN9.

Finally, this week NASA issued certification that the Orion capsule is ready to travel to the Moon. Conducting tests at NASA’s Glenn Research Center’s Plum Brook Station in Sandusky, Ohio, where it spent 4 months in the world’s largest vacuum facility to subject Orion to the extreme temperature variations and radiation of interplanetary space.

You can read the full story [HERE](#).

August New Moon Weekend

Instead of saying this is for the August New Moon Weekend, why don't we just say July to September instead?



Vintage Eyepiece Case

GUY EARLE

★ For decades I've used aluminum cases to hold my eyepieces, binoviewer, and Sky Commander, along with other miscellaneous gear. A great majority of the time, especially during the summer months when I seldom go to the observing site, I have my two, old and battered aluminum cases constantly open next to the 10" Cave equatorial reflector that I slide out the garage most evenings for planetary and lunar imaging (yes, "slide," as I use furniture sliders to drag the scope out rather than bounce it along on wheels).

These cases have been with me a long time, I'm guessing since the late 90's. They've worked great, and I felt so James Bond'ish, carrying this gear and clicking the latches as I set up for an observing session. However, now that I am frequently going back and forth for

eyepieces, barlow, and my cameras during an evening's imaging session, they weren't working anymore. You see, once you take the eyepiece out of the plastic screw case then you have no place to set it other than lay it sideways on the foam, and by the time I was done each night the cases were a mess.

To preface my solution, I've always gone to garage sales. First, as a kid I went with my mother "sale'ing" and now (before COVID), my wife and I go to Sun City Center, seeking out estate sales for those old, unique items. I've had a bit of a Renaissance in astronomy gear, falling back in love with old German Equatorial Mounts (GEM's) and reflectors from the 50's and 60's. This started when Mike Partain gave me the heads up back in November 2018 on a '59 Cave Astrola that I restored, and since then I've picked up a '65 RV-6 from Criterion and an early 80's Meade 826 in mint condition. So, when I decided that I needed a new way to store my eyepieces, I purchased a wooden case, but not just any typical case.

Aluminum cases are great because if you drop them then all your gear is safe, but honestly, thinking back on 27 years of observing I don't ever remember a time I dropped them. Wooden cases are not meant to lock your gear and protect them from a fall, but a convenience of getting at everything easily. I found an old toolbox on Craigslist for \$50, and I'm guessing based on the patina of the oak and the dovetail cuts on the joints, that it is many decades old, perhaps even a century. It was in rough shape, but I decided to give it a go.



Above: You can see the split in the lid along the whole top, with the vertical piece of wood used to the a saw in place.



Measuring 34" wide, 8" deep, and 10" tall, it would fit all my gear plus some. Starting with a cleaning of mineral spirits and "00000" steel wool, I took many of the scuffs off the wood, stripping it of the various oils that had stained it from the tools it once carried. Some stains would never come out, but I was okay with that—the older I get myself, the more I say these "add character." I then reinforced the lid and base with 1/8" birch plywood, as there were a few splits in them. I later would add

epoxy to those splits, making them rigid and stronger perhaps than they were new. I cut an eyepiece tray out of 1/4" birch, which could be removed to get at anything that happened to fall inside, and a taller and smaller tray for my longer barlows. I cut the original insert tray in half, and used pieces of what I cut off to make dividers and an additional rack to hold my cameras. I painted the two other trays black and began covering them with black felt, something I liked in a converted cigar box I got from one of the vintage telescopes.



As I turned the corner to finishing the case, I rubbed it with Old English, bringing out the luster of the wood, which sucked up the moisture after having had it stripped with the mineral spirits. I finished adding the felt, some eyepiece magnification charts, and two lights; one of which is from an old 1960's refractor and is white light, for when I'm in the garage and night vision isn't a concern. The other is a battery-powered red USB flexible laptop light. I added some extra hardware on the outside, and even labeled all my caps, allowing easy identification at night, and my restoration was complete.



Final call to VOTE for the 2021 OBS t-shirt design

The SPAC board has chosen the top three submissions from our membership for the **Orange Blossom Special** star party commemorative t-shirt. **All registered SPAC members** have until **OCTOBER 1st** to vote online by following the link at [OBS T-SHIRT VOTING](#). The results will be tallied and announced at both the business and general meetings next month, as well as the newsletter.

OPTION "A"



OPTION "B"



OPTION "C"



2021 Orange Blossom Special Update

MIKE PARTAIN



For It is almost October and in a normal world, this would mean the beginnings of the 2021 **Orange Blossom Special (OBS)** with early registration but this is 2020 and well, uh, umm, our venture into bizarro world continues. I wanted to take a moment to update our club members on the status of OBS 2021.

In a normal world, OBS 2021 registration would open in October to register for OBS (February 10th through Sunday, February 14th). However, nothing about our world has been normal since last March. Hosting the OBS annual Star Party is no easy task and takes time to plan. The club furnishes tents, porta potties, administrative golf carts and other club expense odds and ends. We also coordinate the event with the park to block off all public camping to only our club, which, in turn, we pay the camping fees revenue to the park as part of our registration expenses. The current pandemic has thrown our plans into disarray and at this point in time, we will have to start making decisions about our annual star party sooner rather than later. Unfortunately, the pandemic is pneumatic which means it is spread through the air to people in close proximity. Astronomy is not normally a “social” event and there is usually plenty of social distancing involved. However, there are weak points which we must consider for the safety and well-being of our members. First and foremost, the lecture and mirror lab tents, registration tent, porta potties, the club house and even the park bathrooms are all weak points and potential transmission areas. Simply put, with COVID 19 active in the community, the weak points listed above would need to be eliminated.



It didn't take long to realize that planning our OBS is going to run into some significant challenges and we have discussed our options during the last few board meetings. Between the end of October and our November board meeting we will have to make the hard decisions. With no vaccine in hand nor an effective way to treat the virus, we have to err on the side of caution for our collective health and safety.

As the OBS Committee Chair, I feel we have two options to consider amid our current situation. 1. Cancel OBS 2021 and plan for 2022 or 2. Reduce the scope of OBS 2021 to a registered club member only event with limited facilities and group activities.

We will keep everyone updated both on our Facebook page and the club newsletter. I expect decisions to be made and finalized in November of this year. Please stay safe and thank you for supporting both our club and OBS in these unusual times.

SPAC Mirror Lab

2021 OBS Raffle Scope!



The St. Petersburg Astronomy club mirror lab would like to present our 2021 raffle scope to be raffled off at our club's annual Orange Blossom Special (OBS) Star party February 10th through 14th, 2021. The OBS raffle scope is a tradition here at SPAC and this year's raffle is a club refurbished 12" Meade Lightbridge truss dobsonian telescope. Tickets are 1 entry for a \$10 dollar donation and 3 entries for \$25 dollars. All donations go to the St. Petersburg Astronomy Club.

The scope was found on Facebook Marketplace and donated to the club as a raffle scope earlier this year. The scope was in rough shape and needed an overhaul of the optics, metal parts and base. Mike, Allen, along with Ralph and our club President, Brad, worked hard to bring this scope back to life. The metal casings were stripped and all rust removed, then repainted. The particle board base was copied and re-fabricated with birch plywood. The mirror and secondary mirror were



taken to Spectrum Coatings in Deltona for a fresh new optical coating. The raffle scope includes a vintage JMI tracking system that keeps the scope aligned to the target you are viewing. Please take a moment to view the before and after photos of this astounding transformation from a weathered garage find to a one-of-a-kind gem. SPAC will commence sale of the raffle tickets on our website on October 1st with the drawing to be held on Saturday February 13th, 2021 at the club's annual OBS star party at Withlacoochee River Park. You do not need to be present to win.

SPAC Astrophotography

GUY EARLE



Here are some fantastic 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: Our **Solar System** taken over the course of a year with a 1959 10" f/7.1 Cave Astrola (with the exception of Mercury w/1965 RV-6) and an ASI290MC. — **by the editor**

Right: **Eagle Nebula** taken over a couple of nights in West Palm Beach about 10 days ago. Total 5.25 hours: 63 x 5min frames with narrowband filters (SHO). Meade SCT with reducer at 1300mm, ASI1600mm Pro, EQ6-R. Processed in Pixinsight and Lightroom.
by Omar Rahman





Left: "The Moon in her most seductive phase" 6" Celestron and an old DSLR. I blended the moon with an open star cluster in GIMP by Daniel Dawson

Right: **Elephant Trunk Nebula** taken over several nights in the last few weeks, from St Pete. 1) Wide field at 200mm with Tamron 70-200 G2 @ f/2.8, total 5.8 hours. 2) Close up of the trunk at 1300mm with Meade 8" SCT with reducer, total 7.7 hours. Both are with narrowband filters (SHO), 5-minute frames, ASI 1600mm Pro, processed in Pixinsight, finished in Lightroom by Omar Rahman





Below: **Mare Vaporum on the Moon**, taken 8/25/20 w/10" Cave Astrola f/7.1 w/Neximage 10 and processed in ASI2, Registax, Astra Image, and Paint.net **by the editor**

Above: **moonrise** as viewed from St. Petersburg, FL. This is a composite of four images taken approx 30 second apart starting 8:18 pm when the moon was just above the horizon (Finally, after a couple of weeks, we had a reasonably clear sky!). Camera on Tripod was in manual mode: 400 mm zoom, ISO 200, aperture f/11 and 1/100" shutter speed. Each image needed some minor edits /touch-up in Lightroom and then a composite was created in Photoshop **by Vibhakar Shroff**



Moon Night 2020!

SHIRLEY VUILLE



The International Observe the Moon Night is Saturday, September 26th. Join people all around the world in this NASA sponsored event to observe and learn more about our Moon.

Website: <https://moon.nasa.gov/observe-the-moon-night/>

Moon Observing Guide:

<https://www.worldscientific.com/doi/pdfplus/10.1142/S0217732320300207>



Annual Elections

STEVE GABER



This year's elections will be conducted online via our website on **October 24th**.

You will need to go to [the club website](#) and sign in. Once signed in, you will see a green button, "Annual Elections."

The election for Club offices and board members is to be held this October.

Here are the **current** officers and Directors at Large:

President, Brad Perryman

Vice President, Paul Krahmer

Secretary, Shirley Vuille

Treasurer, Jim Hunter

2020 Director, Steven Gaber

2019 Director, Kyle Brinkman

All the above officers have agreed to continue to serve in their respective positions.

The 2021 Director position is vacant and open for nominations.

The Club thanks David Riichmond for faithfully serving as a Director since 2018.

The Board of Directors invites members to submit new nominations for these positions.

Any Club member who wishes to submit a nomination is encouraged to do so by the September general meeting. If you nominate a person for a position, be sure to ask that person if he or she is willing to serve in that position.

The election will be held on the day of the general meeting, **October 23, 2020**.

National Weather Service

SHIRLEY VUILLE



The 2020 Atlantic hurricane season is June 1 – November 30. Now is the time put together a hurricane survival kit. Pinellas County has produced a guide to help you make these preparations and can be found at the link [HERE](#).



SPAC Mirror Lab Report

MICHAEL DAVIS



This month's mirror lab article is going to be short and sweet. That's because I am traveling. I am writing this from my little cabin in the woods in Arizona. Unfortunately, I am inside listening to the thunder and the rain pounding on the roof, instead of setting up my equipment for a night of astrophotography. But I am going to be here for about another week. I'm hoping to get in a few good nights. Then I am moving on to our ranch in Wyoming for about a week. Hopefully there will be some nights of good observing there too.

We finally got all the mirrors together that folks from the Mirror Lab and other club members needed to get coated or re-coated, and by now they will have been dropped off at Spectrum Coatings. Hopefully we will have them back in about a month or so with shiny new coatings, ready to be put in their telescopes in time for some (hopefully) good observing during fall and winter. Is it just me, or has the summer been mostly a bust for observing this year?

It hasn't been a complete bust for observing here in Arizona. I brought along the 10 inch DOB telescope I wrote about last month. It was built around the first mirror I ever finished at the Mirror Lab. I was able to use it for a while the first night I was here. I got in several wonderful hours of old-school star-hopping type observing under the amazing Arizona sky. Here is a photo of the telescope in



action. This scope is on its way to its new home at our ranch in Wyoming.



I will be travelling again next month for most of the month, and will be out of touch with the Mirror Lab scene. I'm going to be pretty much out of touch with civilization as a whole, so this is a golden opportunity for anyone out there with a mirror grinding or telescope making story they'd like to share. Get in touch with me at the below email address to submit it. Otherwise next month's article may be even shorter.

That's all for this month. You can follow all the goings on at The Mirror Lab at <http://telescopeLab.com/>. You can follow what I am doing on my blog at <http://www.mdpub.com>. If you know of a mirror making or telescope making story that you think should be showcased here, email me at astronomermike@gmail.com. Put "Mirror Lab Submission" in the title so it will stand out.

International Dark Sky Association: Satellite Constellations and Astronomy

LEEANN MUSZYNSKI

★ Megaconstellations, also known as low-earth orbit constellations (LEO), are webs of networked satellites that orbit the Earth at altitudes of 2,000 km or less. They are intended to provide global telecommunication services. The brightness and frequency of the objects have caused concern amongst the astronomy community and the general public.



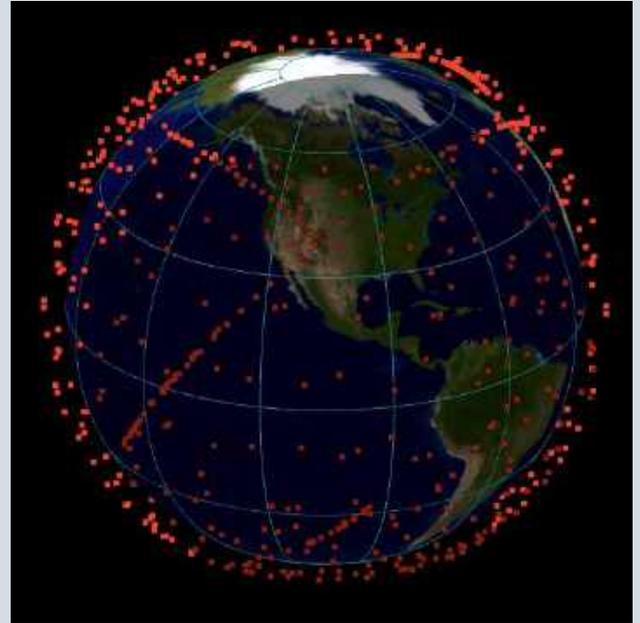
Telescopes at Lowell Observatory in Arizona captured this image of galaxies on May 25, their images marred by the reflected light from more than 25 Starlink satellites as they passed overhead. (Credit: Victoria Girgis/Lowell Observatory)

Now educators at NASA are asking citizen scientists to help document the problem as part of a long-term effort to study how the technology will change our night sky.

Anyone with a smartphone and a tripod can contribute.

Visit <https://scistarter.org/satellite-streak-watcher>

The website heavens-above.com gives a live sky view of currently visible satellites and also provides a dynamic 3D orbit display



Astronomers and satellite operators agree there is a problem. The SATCON1 workshop was held virtually from June 29-July 2, 2020. It focused on technical aspects of the impact of existing and planned large satellite constellations on optical and infrared astronomy. More than 250 astronomers, engineers, commercial satellite operators, and other large stakeholders attended SATCON1. Their goals were to better quantify the scientific impacts of huge ensembles of LEOsats contaminating astronomical observations and to explore possible ways to minimize those impacts. To see the full report, go to noirlab.edu

SATCON2 workshop will tackle the significant issues of policy and regulation. It is tentatively planned for early to mid-2021.

SPAC Business Meeting 

Our next business meeting is Wednesday, October 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	Brad Perryman	727 420-1957
Vice Pres.	Paul Krahmer	727 535-5827
Secretary	Shirley Vuille	727 864-2624
Treasurer	Jim Hunter	813 507-8415
Dir.-at-Large	Kyle Brinkman	727 455-6931
Dir.-at-Large	Steven Gaber	727 215-0464
Dir.-at-Large	David Richmond	727 692-9831
SPACE Editor	Guy Earle	813 785-1972
Public Relations	John O'Neill	727 637-5945
Membership Chair	Shirley Vuille	727 864-2624
Mirror Lab Chair	Paul McNabb	727-345-5713
Outreach Chair	Jim Hunter	813 507-8415
Star Party Chair	Mike Partain	859 339-0828
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

Recognition of Patrons & Benefactors:

Clifford B. Benham	Benefactor
Walter Brinkman	Benefactor
Andy Demartini	Benefactor
Jack & Roni Fritz	Benefactor
Hosn, Ricky & Hala	Benefactor
David Knowlton	Benefactor
David & Tara Pearson	Benefactor
Rath, Damon & Jean Futch	Benefactor
Doug & Teri Sliman	Benefactor
Bruce Berger	Patron
Tim Cannedy	Patron
Michael Coate	Patron
Ralph & Christine Craig	Patron
Peter & Jaclynn Dimmit	Patron
Joseph & Pamela Faubion	Patron
Steve & Cindy Fredlund	Patron
Richard & Mary Garner	Patron
Valentino Hernandez	Patron
Charlie & Linda Hoffman	Patron
Scott & Beth Irwin	Patron
Matt Labadie	Patron
Laura Lanier	Patron

Corey Lynch	Patron
Robert Myers	Patron
Stephen Oros	Patron
Antonio Paris	Patron
Brad & Lisa Perryman	Patron
Alan Polansky	Patron
David & Rusty Richmond	Patron
Anthony Staiano	Patron
Wally & Ramona Vazquez	Patron

Examiner Staff

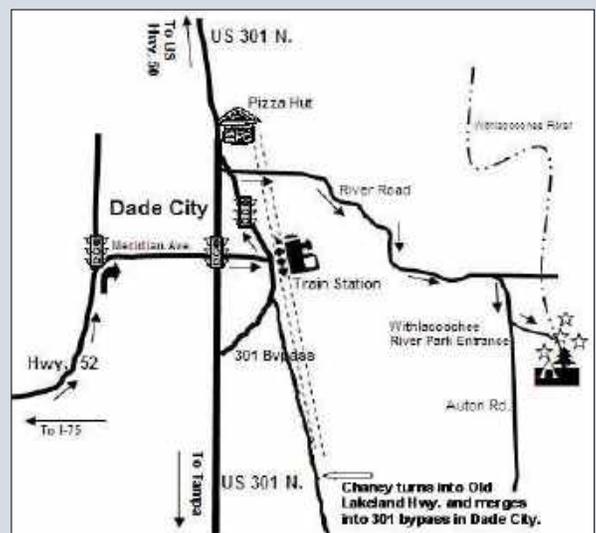
Editor	Guy Earle	813 785-1972
Reporter	Kelly Anderson	813 672-2751
In the News	Steve Robbins	386 736-9123
Mirror Lab	Ralph Craig	727 384-2086

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.



Withlacoochee River Park - Dade City, FL



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.