



May 2020

Editor – Guy Earle

The St. Petersburg Astronomy Club has been the center of family astronomy in the Tampa Bay Area since 1927. Our 278 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.

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### President's Message



Covid-19 has affected too many lives and businesses in a short amount of time that will be felt for years, the field of astronomy included. Hundreds of large research telescopes have closed and will be closed for months to come. Questions remain on how they will get back to observing the sky, since most require teams to work together in close proximity to operate and maintain the equipment. Some facilities, that are able to stay open, operate where most functions are controlled remotely or with few staff members where social distancing can be maintained, or are deemed too important to shut down. The twin Pan-STARRS telescope in Hawaii is one of those facilities, as it searches for near Earth objects on an impact trajectory with our planet. Another facility that has not been affected by the shut down is the South

*BRAD PERRYMAN*



Pole Telescope that maps the radiation left over from the Big Bang. The 42 member team have been self-quarantining since February 15, as they hunker down for the dark and frigid winter. As America begins to re-open, we all still need to take precautions to protect ourselves, family and community from contracting this dangerous virus until we have a working vaccine in production. One day we will return to normal, and I would like all of my astronomy friends to be in good health.

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### New SPAC Members

We would like to welcome Ian & Erin Kelley, and Les & Janet Gatechair to our family of members.

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### May General Meeting

As in April, this month's general meeting is **cancelled** due to concerns of COVID-19.

However, the club's **New Moon observing weekend** will be held May 22<sup>nd</sup>–23<sup>rd</sup>, as Withlacoochee River Park will be open again as of May 16<sup>th</sup>.

The TBA June meeting will be held on Friday the 26<sup>th</sup> at **8:00 PM**, at St. Petersburg College, Gibbs Campus, 6405 5<sup>th</sup> Avenue North.

**June Astronomical Events**

GUY EARLE



**June 4<sup>th</sup>, MERCURY AT GREATEST ELONGATION:** The planet Mercury reaches greatest eastern elongation of 23.6 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the western sky after sunset.

**June 8<sup>th</sup>,** the Moon and Jupiter are in conjunction, or close approach, and should be a pretty sight to see. Likewise, with Saturn chasing Jupiter, it will also be the ringed planet's closest visual approach to the Moon.

**June 12<sup>th</sup>,** conjunction of Mars, Neptune, and the Moon.

**June 15<sup>th</sup>,** Jupiter is due south at its highest elevation around 3:45 AM and is a large 45 arcseconds, providing a splendid view. Jupiter will reach opposition on July 14<sup>th</sup>, with Saturn following on July 20<sup>th</sup>, providing the largest and likely the best views of the season.

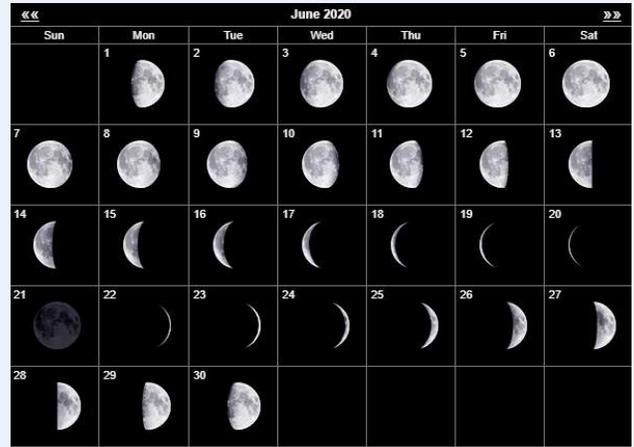
**June 19<sup>th</sup>,** conjunction of the Moon and Venus.

**June 20<sup>th</sup>,** Summer Solstice

**June 22<sup>nd</sup>,** conjunction of Mercury and the Moon.

**The Moon**

- Full Moon – June 5
- Third Quarter – June 13
- New Moon – June 21
- First Quarter – June 28



**Jupiter in Infrared**

ARTICLE FROM SYFY.COM



Jupiter is not here to screw around. Concurrent observations of the solar system's mightiest planet by Hubble Space Telescope, the Gemini Observatory, and the Juno spacecraft show that Jupiter's thunderstorms are ridiculously huge, towering skyward for 80 kilometers or more, powered by heat from below and water in the atmosphere. That's five times taller than similar storm systems on Earth.

That happens a lot. A recent study showed Jupiter crackles with lightning from between 2,000 to 60,000 times per second. Per second. That means there must be a lot of storm cloud activity on the planet too, and that's where Gemini and Hubble come in. They observed Jupiter at the same time

Juno is on closest approach, to get the best possible observations of these storms.

Gemini North is an 8.1-meter behemoth in Hawaii and is sensitive to infrared light. Looking in thermal infrared (4.7 microns, a wavelength about five times longer than the reddest light our eyes can see) — essentially making a heat map of the planet — Gemini saw **this**:



There is much more to the article, including detailed color photos and an infrared examination of the Great Red Spot. To read the full article, click [here](#).

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## On Everything Since OBS

### March, April and what's left of May, 2020

*KELLY ANDERSON*

★ If you fell asleep after OBS last February and are just now waking up, there hasn't been a lot to report from field activities, mostly because there hasn't been any field activities. A few of us made it to

Chiefland for the weekend of March 20<sup>th</sup>. We were careful to observe keeping our physical distancing, but shortly after that we began self-isolation in earnest.

We had pretty good viewing at Chiefland with clear skies and fairly low levels of upper level moisture.

I was able to capture several of my favorite targets, such as M101, the Pinwheel Galaxy.



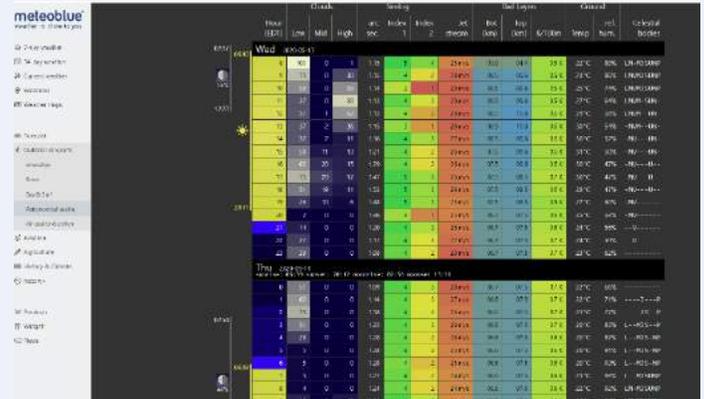
Since then my field activities has been limited to my backyard, almost as bad as trying to star-gaze from the 50-yard-line at Raymond James Stadium during a Buc's game. Even so I was able to get a so-so image of the conjunction of Venus and M45, the Seven Sisters. Since then I've been focused on trying to upgrade my bag of tricks by trying to get BYEOS, PHD2, CPWI, and N.I.N.A. to all make nice and play together. Making progress but no victory yet.

Guy Earle has been making some really good stuff from his driveway with his indomitable Cave refractor. In case you missed it, check out his Moon shots on our

Facebook wall. Joe Canzoneri has been learning his new camera (a ZWO something or other) and scope. A few others have been reporting their stuff on our Facebook wall, so while we've been quiet, we haven't stopped looking up.

The big news is that Withlacoochee River Park, which has been open for day activities for a week or so, will be opening for camping activities soon. Not sure yet what restrictions there might be, but Jack Fritz has developed a "social distancing camping" plan for the field for the May 22 New Moon Weekend, so we'll be able to finally get back to it in a safe and responsible way. Since Joe got a new camera and scope, any weather problems will be on him.

tremendous amount of data: it's called [meteoblue](#). This is the website version; there is an app, but it does not have the data.



**A Great Forecasting Site**

GUY EARLE



I mentioned in last month's edition some of the astronomy apps I use on my phone. Clear Dark Sky, known to us veterans as Clear Sky Clock, has been used for many years as a great forecasting tool for observing sessions. Unfortunately, it has proven more unreliable for seeing lately. So, I've been on the search for something that gives more detail for seeing conditions and perhaps even the jet stream, which can prove a real killer for achieving focus.

This all comes up from recent imaging sessions where I just could not get Jupiter to come to focus. Clear Dark Sky said things were great, but that was not so. I happened to come across a website that has a

It may be hard to see, but there are three separate indicators for cloud cover, two for seeing conditions, and even one the jet stream! I only just found this but I will certainly report on its reliability in a future Examiner.

**A Call for OBS T-shirt Art**

GUY EARLE



The board is implementing a change to the OBS t-shirt process for the 2021 starparty, with the hope of offering a broader spectrum of designs and a final choice vote by SPAC members. Any and all members who would like to submit an OBS 2021 t-shirt logo design, please [email your artwork to the editor](#) by August 1<sup>st</sup>.

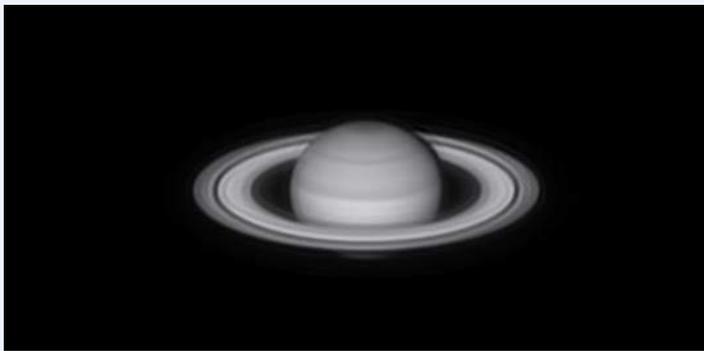
The board will then help narrow down the submissions and in a subsequent Examiner the choices will be offered as a vote to all SPAC members receiving the newsletter.

### SPAC Astrophotography

GUY EARLE

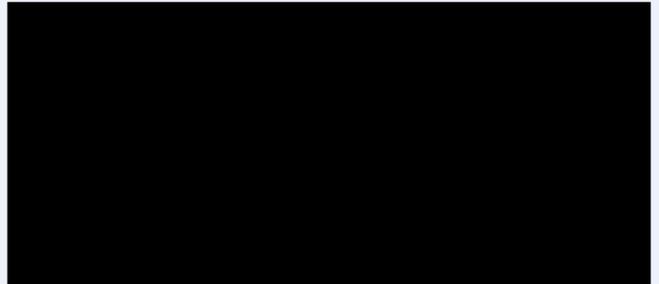


Here are some fantastic astrophotography highlights from our fellow SPAC members. Anyone who would like to share his or her work, I encourage you to [email the editor](#) to submit for future newsletters or share them on our [SPAC Facebook page](#).



**Left:** Saturn in visible, infrared, and methane. They were taken with a MEADE LX200GPS SCT 10 inch F/10 at fl 2500. Processed with Firecapture, Registax and Photoshop **by Greg Shanos**

**Below:** First deep sky photograph **by Doug Sliman**



**Above:** M104 from "my backyard" **by Joe Canz**  
**Below:** Crater Grimaldi **by the editor**



**Left:** Venus Cloud Features on April 2, 2020 0h 19m UT stack of 3550 images utilizing the UV with #47 Violet combined filters. Firecapture for acquiring the video and processed with Autostakkert 3, Registax6 & Photoshop CS4. Meade LX200GPS 10-inch f/10 2500mm alti-azimuth no Barlow, ZWO ASI290MM monochrome camera **by Greg Shanos**



**Right:** Jupiter in the Infrared on March 22, 2020, 11h 36m UT stack of 2346 images. Firecapture for acquiring the video and processed with Autostakkert 3, Registax6 & Photoshop CS4. Note how clearly visible the surface features on Jupiter appear in infrared wavelengths. The great red spot is barely visible on the lower right and is rotating off the edge of the planet. Meade LX200GPS 10-inch f/10 2500mm alti-azimuth no Barlow, ZWO ASI290M monochrome camera **by Greg Shanos**



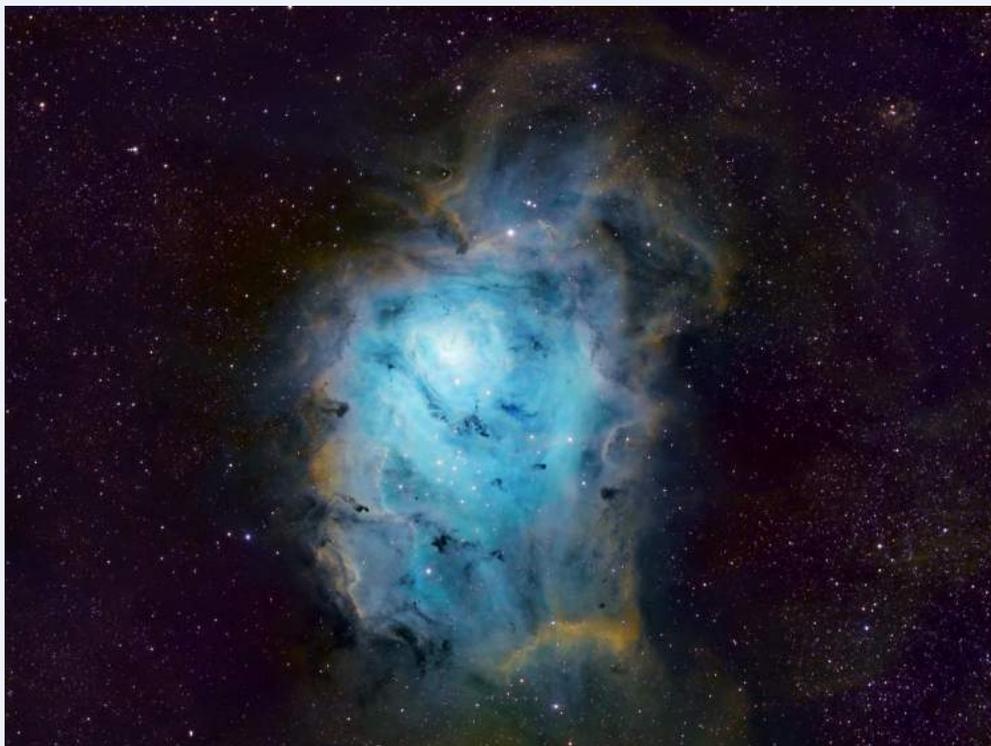
**Left:** Jupiter in the methane (CH<sub>4</sub>) band at 890 nm taken on March 28, 2020 9h 57m UT stack of 428 images. A transit of Io was in progress. Io glows brightly on the upper left, the shadow of Io is evident near the central meridian and the great red spot is the bright circle on the lower right. The poles of Jupiter also glow brightly in the methane band. Firecapture for acquiring the video and processed with Autostakkert 3, Registax6 & Photoshop CS4. Meade LX200GPS 10-inch f/10 2500mm alti-azimuth no Barlow, ZWO ASI290MM monochrome camera **by Greg Shanos**



**Left:** Saturn in the Methane band at 890nm on March 22, 2020 10h 49m UT stack of 1023 images. Captured using Firecapture. Processed with Autostakkert 3, Registax & Photoshop. Where did the planet go? Saturn's rings glow brightly in the methane band. Firecapture for acquiring the video and processed with Autostakkert 3, Registax6 & Photoshop CS4. Meade LX200GPS 10-inch f/10 2500mm alt-azimuth no Barlow, ZWO ASI290MM monochrome camera **by Greg Shanos**

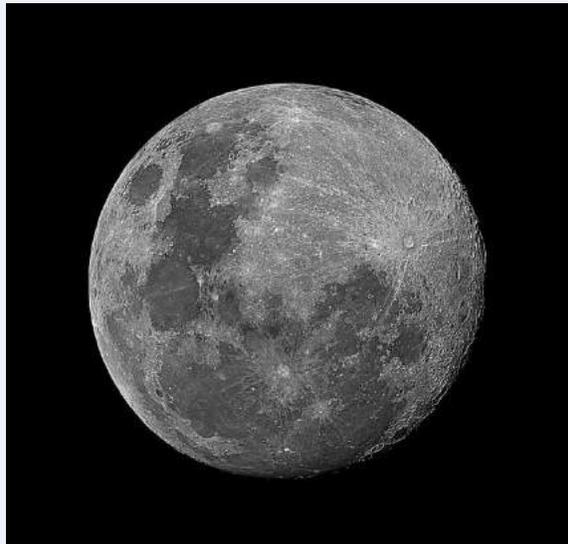
**EDITOR'S NOTE:** Anyone who follows our club Facebook page, especially the past year, has seen countless images that I've posted (under the profile Philip Adama), and I can truly say that Greg's images are some of the best I've seen in all various wavelengths. They're simply beautiful and a gold standard.

Also, I need to correct an error on last month's issue, where I credited the great Orion filter deal to Greg "Simpson" rather than Greg Shanos, as it should have been. Likewise, there was a photo in that same April issue of a Venus conjunction where I made the same error. Mea culpa.



**Left:** M8 The Lagoon Nebula (SHO)  
Dates: 2020-05 3, 5, 7  
Location: My house in St Pete  
Exposures: HA: 180s x 50, OIII 180s x 57, SII 180s x 49  
OTA: Celestron RASA 11  
Mount: Celestron CGX  
Camera: ZWO ASI 1600MM Pro  
Filters: Baader Highspeed Ha/OIII/SII  
— in Saint Petersburg, Florida  
**by Jaime Kenas.**

**Right:** May 7<sup>th</sup> Moon with Orion  
80mm refractor **by Rich Tobin**



**Below:** May 9<sup>th</sup>  
composite of Saturn and  
six of its moons with 10"  
f/7.1 Cave Astrola and  
ASI290MC w/IR cut **by  
editor**

**Below:** The Western Veil Nebula (a.k.a  
the Witch's Broom) & Pickering's  
Triangle are part of a massive  
supernova remnant cloud in the  
Cygnus constellation. Relatively close  
at 2,100ly away, the supernova  
happened about 8,000 years ago and  
would have been visible to the naked  
eye. The Witch's Broom has the super  
bright star 52 Cygni in the top  
middle and Pickering's Triangle is the  
wispy triangular shape mid-bottom  
left. 7.5 hours @400mm f/2 in  
bicolor H- $\alpha$  and OIII **by Naresh Singh**



## National Weather Service

SHIRLEY VUILLE



NOAA has been gearing up for the 2020 Hurricane Season beginning June 1st. It's better to be prepared than caught wanting. For more information, click [here](#).



## SPAC Mirror Lab Report

MICHAEL DAVIS



The Mirror Lab is still homeless, and the members are scattered to the four winds, but ATM projects are still happening. Tom Spano answered my call for submissions and sent me some information on what he's been doing while on Corona Virus lockdown. His first photo looks as if his scope is getting the presidential Seal of Approval.



Here is what Tom submitted:

For my "Safer at home" project, I decided to remake my ten inch f/6 split ring equatorial telescope. I originally made this scope in 1991 based on a scope made by Joe Pearson and featured in "TELESCOPE MAKING Magazine" issue number 27. I've replaced or remade bits and pieces of it over the years and re-figured the mirror at the MIRROR LAB in 2007. At first I used a small DC gear motor driving a roller skate wheel to rotate the split ring. A few years later James Lerch told me how he made the large worm gears for his 8 inch binocular

telescope out of epoxy, so when it was time to replace the split ring I used James' method of filling a groove cut in the edge of the ring with epoxy, then using a threaded rod coated with silicone to impress gear teeth into the epoxy before it set up. The split ring becomes a worm wheel and the threaded rod is the worm gear. The 16 tpi threaded rod turning at 1 rpm will spin the thirty inch diameter split ring at one revolution per day.

About eight or ten years ago the motor drive conked out and I've been too busy playing with Dobsonian scopes to mess with the split ring scope till now. My current plan is to try to come up with a way to engage and disengage the worm gear (threaded rod) from the worm wheel (split ring) while I am at the eyepiece. I'm thinking of moving the gear in and out with a car door lock actuator/plunger. These things are very inexpensive and they only need power (12vdc) when moving. Unlike most relays and solenoids once in position (up or down) it'll stay there without power. The disadvantages include limited travel (about 3/4 inch) they are pretty weak.



If this works I may try some planet imaging.

The first photo shows how it looked in 1991. The others show how I am attempting to engage the drive screw remotely.

Thanks for that submission, Tom.

All I could think of after reading it and seeing the photos is, "Read my lips. No new roller skate wheels!"

Anyone else out there who wants to have their project highlighted here can send their submission to me at astronomermike@gmail.com. Please put something like "Mirror Lab Submission" in the subject line so I can sort it out of the reams of other emails I get. You can also follow what I am doing on my blog at <http://www.mdpub.com>. That's all for this month.



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## Dark Sky Association

LEEANN MUSZYNSKI

## **Get out and observe the night sky! Can YOU see the stars?**



Light pollution has been a known issue for decades. But we've only recently been able to access the tools and technology to better understand which sources contribute the most to light pollution, and what impact that has on the natural world.

Take part in the [Globe at Night](#) campaign. This worldwide campaign asks individuals to measure the quality of the night sky where they live. You don't have to leave your backyard (or porch or patio) to take night sky measurements, and reporting your results takes only a moment using the Globe at Night web app. Your reported measurements are added to other reports from around the world where they are held in an open-source database. With these measurements, scientists can see how the quality of the night is changing all around the world. **Your measurements help the International Dark Sky Association develop targeted policies and guidelines to help solve the problem of light pollution.**

Help protect the night. Join the Globe at Night campaign **May 14–23, 2020.**

[www.globeatnight.org](http://www.globeatnight.org)

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**INTERNATIONAL DARK SKY  
ASSOCIATION**

**"Capture the Dark" Photo Contest  
May 8–25, 2020**

Calling all photographers! Do you have a beautiful shot of the night sky? ...Or a not-so-beautiful shot of light pollution? Enter IDA's 'Capture the Dark' Photo Contest!

There are five contest categories to enter and photos will be judged by a panel of international photographers. Learn more and enter the contest at

[darksky.org/capturethedark](http://darksky.org/capturethedark)

**SPAC Business Meeting** 

Our next business meeting is Wednesday, June 10<sup>th</sup>, 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	<a href="#">Brad Perryman</a>	727 420-1957
Vice Pres.	<a href="#">Paul Krahmer</a>	727 535-5827
Secretary	<a href="#">Shirley Vuille</a>	727 864-2624
Treasurer	<a href="#">Jim Hunter</a>	813 507-8415
Dir.-at-Large	<a href="#">Kyle Brinkman</a>	727 455-6931
Dir.-at-Large	<a href="#">Steven Gaber</a>	727 215-0464
Dir.-at-Large	<a href="#">David Richmond</a>	727 692-9831
SPACE Editor	<a href="#">Guy Earle</a>	813 785-1972
Public Relations	<a href="#">John O'Neill</a>	727 637-5945
Membership Chair	<a href="#">Shirley Vuille</a>	727 864-2624
Mirror Lab Chair	<a href="#">Paul McNabb</a>	727-345-5713
Outreach Chair	<a href="#">Jim Hunter</a>	813 507-8415
Star Party Chair	<a href="#">Mike Partain</a>	859 339-0828
Librarian	<a href="#">Ralph Craig</a>	727 384-2086
Club Webmaster	<a href="#">Jack Fritz</a>	813 508-5680

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
David Knowlton	Benefactor
David & Tara Pearson	Benefactor
Ronald & Sterling Algieri	Patron
Bruce Berger	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
Robert Myers	Patron
Antonio Paris	Patron
Brad & Lisa Perryman	Patron
Alan Polansky	Patron

David & Rusty Richmond	Patron
Anthony Staiano	Patron
Wally & Ramona Vazquez	Patron

**Examiner Staff**

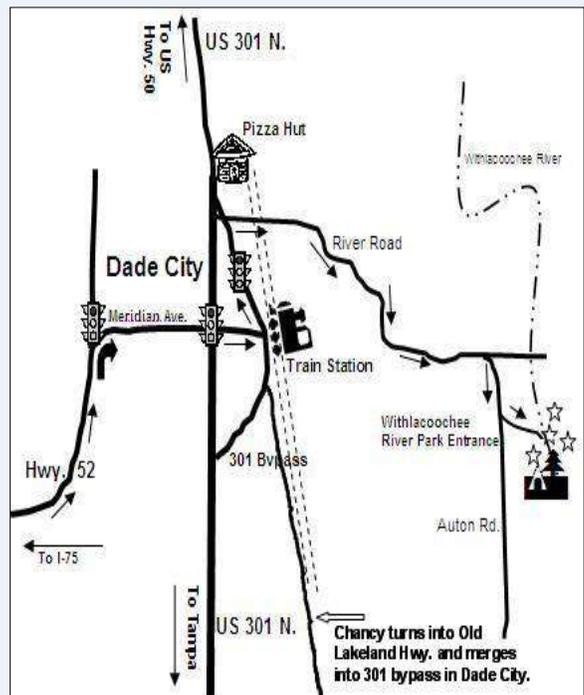
Editor	<a href="#">Guy Earle</a>	813 785-1972
Reporter	<a href="#">Kelly Anderson</a>	813 672-2751
In the News	<a href="#">Steve Robbins</a>	386 736-9123
Mirror Lab	<a href="#">Ralph Craig</a>	727 384-2086

**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**

Detailed directions can be found at:



## 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](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.**