



April 2019

Editor - Guy Earle

The St. Petersburg Astronomy Club has been the center of family astronomy in the Tampa Bay Area for decades. Our 256 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.

### President's Message

*KYLE BRINKMAN*



Great News, we now have a picture of a black hole. More precisely, we have a picture of the gas surrounding a black hole. The novelty of this will wear out in week in the general media. There is a fuss over the woman leading the project because of her gender and young age. Those into identity politics will see something about her that they like. Identity is not a qualification for anything at all, much less a Nobel Prize. That kind of coverage does a personal disservice to her intelligence, leadership and drive. That focus also diminishes the greatness of the accomplishment.

The story is much deeper than a woman taking a picture. Our club has many pictures of many thing up in the sky by many different photographers. Amateur astronomers have discovered many new



things like comets and supernovas. What makes her picture and discovery different?

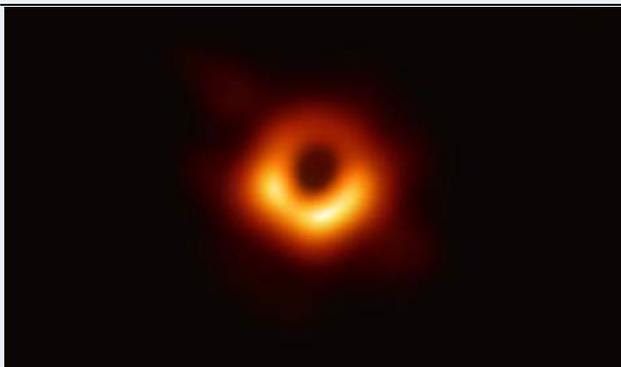
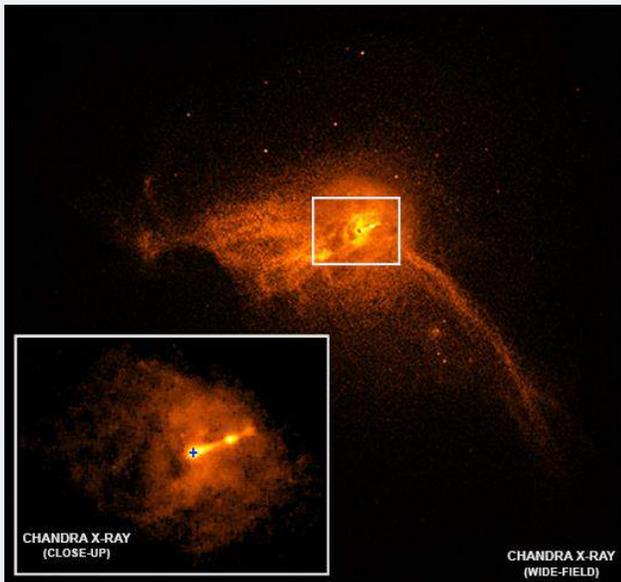
So just how do you get a visual image of a black hole with a radio telescope? Other radio astronomers have created maps of signal strength to create a visual image. Usually it is a field map, not an object so small as a black hole.

There are visual telescope arrays that work like a much larger telescope by combining their light. Mt Wilson has the CHARA Array which operates like a 300 meter scope. They can see starspots (sunspots on other stars) and the shape of stars. Dr Bouman combined signals from 6 telescopes on four continents plus Hawaii. The useful aperture covers half the Earth. Anyone else suffering aperture envy?

Somebody had to get all those telescopes and teams to work together. Then she had to write the software that combined their signals. After the logistics were settled then she pointed the array into the heart of galaxy M87. She cut out the noise that always blows out the center of

galaxies in my pictures. Her instrument peered through 55 million light years and billions of surrounding stars to focus on an object about the size of our own solar system.

The picture confirms what astronomers have thought about these objects for some time. Proof is great, but the bigger question is what else will Dr. Bouman’s technique reveal? The truly great scientists don’t just make a discovery. They change the way we see the universe. Dr. Bouman may have just done that. That is what makes her a star.



**New Members**

We would like to welcome Gary Romano and Brett Koric to our family of members.

**General Meeting**

This month’s general meeting will take place on Friday, April 26<sup>th</sup> at 8:00 PM, at St. Petersburg College, Gibbs Campus. 6605 5<sup>th</sup> Avenue North.

**Withlacoochee River Park Clubhouse**

*GUY EARLE*

★ The SPAC clubhouse, named “The Huff House” for long-time members Bill and Nancy Huff for their dedicated 25+ years of service to the St. Petersburg Astronomy Club, is finished and ready for members.

However, SPAC is still seeking donations necessary to pay the cost of renovating the clubhouse. You may donate online for our [website homepage](#) or mail a check to SPAC, 17316 Oak Ledge Dr., Lutz, FL 33549.

**Trouble with Astigmatism**

*GUY EARLE*

★ I thought I would share something that I’ve apparently been dealing with for some time, I just didn’t know it—astigmatism. I started wearing glasses for nearsightedness a few years before joining SPAC in 1993. For 26 years I have had the habit of taking off my glasses to look through the eyepiece, and is why I have used a binoviewer since 2004, as it is far easier on the eyes than squinting, which gave me headaches the morning after a night’s observing. Flash forward from 1993 to

about a year ago, and I started to believe something was wrong with my telescope's collimation despite my best efforts. I contemplated a pinched primary mirror, a secondary that had maybe slipped, bad coatings or even binoviewer prisms that had shifted. Only when fellow SPAC'er Mike Partain easily distinguished six stars in the Trapezium, while I myself barely saw four, did I realize something was wrong.

If you have astigmatism then your stars, especially bright stars at low power, tend to look like small comets, never getting to pinpoints and having little comet-like tails on them.



If you have astigmatism it means the cornea of your eye, the clear front cover, is irregularly shaped or because of the curvature of the lens inside your eye. However, there is an easy test to see if it really is your eye(s) or your telescope. Rotate your head while looking through the eyepiece. Do the little comet tails on the bright stars move with your head's rotation? If they do, then good news, your telescope is fine! The bad news, you have astigmatism because, probably like me, you're not as young as you feel. There are three solutions available: first, you can get contacts.

Second, you can observe with your glasses on. I know this sounds silly, but if you are used to taking your glasses off, leave them on. After 26 years of observing that obvious solution did not present itself to me. Lastly, Televue makes an adapter that attaches to the top of eyepieces called a Dioptrix, which you choose based on your level of astigmatism. It cancels out the astigmatism effect, making your stars pinpoints again. We all love to see comets, just not on our stars.

### May Astronomical Events

*STEVE ROBBINS*



Sunday, May 5 is the Eta Aquarid Meteor shower with a ZHR of about 60, that's one meteor per minute. This shower is of particular interest because it is caused by Comet 1P/Halley. Although the radiant is fairly low in the sky, the near new moon will make viewing better than average.

Friday, May 10, see the Moon inside the Beehive Cluster. Photo opportunity!

Monday, May 13 the Moon is at Perigee: 369,000 km from Earth.

Tuesday, May 21, Mercury is at superior conjunction on the far side of the Sun.

Wednesday, May 22 Saturn will be .6° north of the moon.

Sunday, May 26, the Moon will be at Apogee: 404,100 km from Earth.

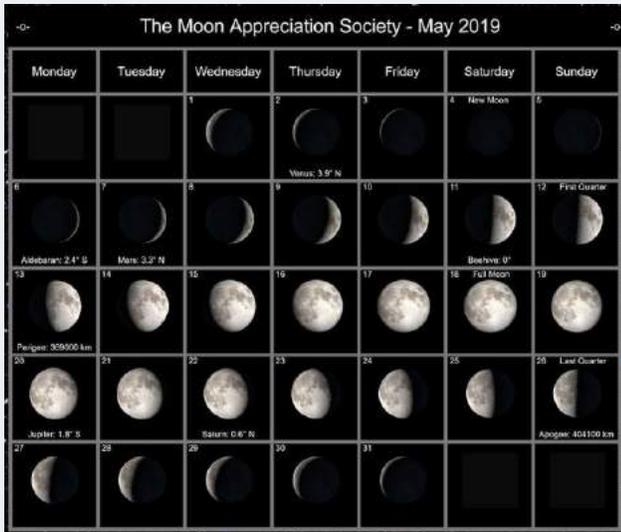
May's full moon is the Full Corn Planting Moon.

New Moon – May 4

First Quarter – May 11

Full Moon – May 18

Third Quarter – May 26



Courtesy of Moon Appreciation Society

**NASA News**

*STEVE ROBBINS*



SpaceX completed its unmanned testing of its Crew Dragon capsule March 3, lifting off, rendezvousing and docking with the ISS, transferring supplies, remaining there for the greater part of a week, and returning to Earth for a nearly flawless mission.

Today, April 3, Boeing announced the postponement of the first uncrewed flight test of its Starliner capsule won't take place until August "in order to avoid unnecessary schedule pressure." Boeing is being paid \$4.2 billion dollars to accomplish the same mission as the \$2.6 billion dollar SpaceX contract.

**April New Moon Weekend**

*KELLY ANDERSON*



We had a pretty good turnout for this month's Dark of the Moon weekend, although I am sad to say that the weather didn't do much to facilitate star-gazing.

On Thursday Cliff & Pamela Gordon and Mark Bruns formed the vanguard for those of us who followed. Friday saw the arrival of, in addition to your stalwart Field Reporter, Tom & Chris Spano, Jack & Roni Fritz, Joe Canzoneri, Richard & Mary Garner, Dave Knowlton, Mike & Carli Partain, Chris Curran, Ron & Dee Wayman, and Franklin Matos.

Strange weather from Up North was messing with us and didn't clear up until after the frontal passage. About 10:00 the clouds went away leaving behind clear but very wet skies. The moisture aloft caused stars to appear a bit fuzzy. We were greeted Saturday morning with dense fog that turned the park into a spooky wonderland. Even the Sun was anemic and wasn't able to burn off the fog until 10:00 or so.

The highlight of the weekend was the annual Spring Picnic Saturday afternoon, featuring Shirley's Special Hamburgers. Also available from the flaming grills of Jack Fritz and this reporter were tasty Polish Sausages. All the usual suspects were also presented, such as Ramona's flan (oh my!) and Penny's chocolate chip cookies. If you went away hungry it was your own fault. About two dozen folks joined us for the occasion. The weather was delightful, a bit humid but moderate temperatures and a heaven-sent breeze made it very comfortable.

Mosquitoes that evening were as usual, but my secret repellent (Deep Woods Off) was fairly effective in holding them at bay.



The rains began about dusk and came down pretty heavily for a few hours, tapering off about eleven-ish. The clouds began breaking up at midnight, and according to Ron Wayman it was perfectly clear by 3:00 am. I'll have to take his word for it since I was comatose in my comfy bed by then.

So not such a good weekend for astronomy but a great time for Astronomy Club fellowship. Our next opportunity to gather at our wonderful dark site will be May 3 - 5. As usual, clear skies are guaranteed.

**SPAC Mirror Lab**

*BRAD PERRYMAN*



We are now into spring. New students, and old, have come with potential mirrors and telescopes to build.

Richard finished hogging a deeper curve into his 13" BVC glass to give it an f/4.5 ratio. After some fine grinding, Richard is now in A/C to polish and figure.



Bill has almost finished his telescope. Ralph and Allen are helping Bill with the design and woodworking for the mirror cell and dob base. It's coming along nicely and looks great.



Paul is in the same boat as Bill, slowly but surely moving towards a finished telescope.

Vu came back to show off his personalized 8" dob. If you can't tell from the picture, Vu used a hospital vital signs wall mount to control the telescopes altitude adjustment.



Dimitri has finished polishing his glass and is on to figuring the perfect parabolic surface. Ron is making sure he stays on task.



We are looking for new views in the lab by upgrading the camera in our Foucault tester. Mike and Ron are testing a camera that should allow us to measure focal ratios below  $f/4$  (for those who are the bravest among us).

I became the latest victim of a broken plate glass mirror blank. It cracked due to the stress of plaster curing on top of it while creating a new tool. We tried fixing it, but alas to no avail. It is the first time this type of incident has happened in the lab. We have since changed the process to prevent it from

happening again. Luckily, I was able to procure a polished 16" Pyrex mirror with a slightly turned edge. In one Saturday, I have corrected most of the error and should have a spheroid surface soon enough. Then it is on to figuring a parabolic curve



An impressive amount of work has been accomplished by all of the afore mentioned in a short amount of time. And, I have to say that it has been the most productive month thus far this year at the mirror lab.

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### SPAC Astrophotography

*GUY EARLE*

Here are some outstanding SPAC photos for the month of April, and I encourage members to submit for future newsletters. More photos can see on our [SPAC Facebook page](#).



M42, Jamie Kenas, Kissimmee Prarie Preserve



M20-M8 by Bob Stelmock w/RASA 8



M51 and NGC 5194 by Jamie Kenas



M81 and M82 by Jamie Kenas

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### A Tool for the Urban Astronomer

*STEPHEN M. RUSH*



My view out the windows of my residence is not the dome of the sky, but rather consists of the City of Saint Petersburg and of Tampa Bay. While they are both beautiful, they do not meet my desire to see the sky.

I live in Downtown Saint Petersburg on the 19th floor of a high-rise condominium building which means that I need to scratch my astronomy itch indirectly. Happily, my cabinet-maker son has solved the problem in a stylish way.

The good news is that we have a pool deck on the 29th floor that does have a great view of the sky, including clear views of the horizon. The altitude places much of the ambient light below me and much of the view is out over Tampa Bay, including the horizon from North to Southeast.

The not-so-good news (from a logistics point of view) is that my Celestron NexStar 11 GPS 'scope weighs 100 pounds when mounted on the tripod and then there are

the accessories such as eyepieces, filters, cameras, observer seat, etc. that one needs when observing. While I had a JMI Wheelie Bar for the tripod, the arrangement was so clumsy that the 'scope just sat in the sitting room looking out the window.

The solution is the great rolling plinth that my son made. The platform is 24" x 36" and it sits on 4 high grade industrial casters. There is a 1" ledge surrounding the platform that makes it perfect for transporting all needed accessories, including a radio and Thermos of coffee.



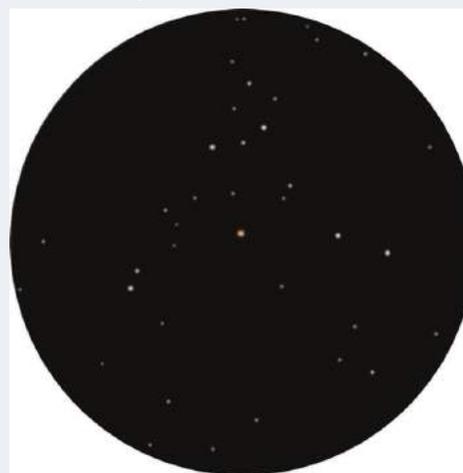
The plinth is set into a mortised opening and is held by "L" brackets. A Starizona Landing Pad is attached to the top of the plinth by countersunk wood screws and a drift pin sits in the middle, providing a target for the 'scope. The Starizona-provided attachment bolts, along with flat washers provide a stable and secure method for attaching the 'scope. With the Optical Tube angled up at 45 degrees, the assembly stands about 67" high. It rolls easily on ball

bearings and it is very controllable. The final step is to turn each caster in at 45 degrees and set the brake. The 'scope is now secure and fully accessible – a wonderful solution!

### Seeing Red: Look for the Carbon Stars

SHIRLEY VUILLE

★ When it comes to observing very cool stars, check out the ancient red carbon stars. They are old, cool-in-temperature, red giant stars that have an abundance of carbon in their atmospheres. The strong presence of carbon is probably the product of helium fusion in their cores. They are described as spectral class C and labelled as (c) in Sky Atlas 2000. The carbon acts like a sooty blanket that limits the light emitted like glowing charcoal embers of a campfire. Carbon stars are all variable in brightness and color. A star may appear school bus orange at brightest and dark red at minimum. Increasing optics size can also deepen the color but everyone seems to see them differently.



Pick a few, observe them season to season, and expect to be surprised by their changing appearances. If carbon stars

become a passion, consider The Astronomical League’s Carbon Star Observing Program, linked [here](#).

These are a few of my favorites:

**WZ Cassiopeia:** Blue & Red (c) double

**R Leporis:** Hinds Crimson Star

**U Hydra:** Carbon star in the most beautiful star field best seen with binoculars.

**V Hydra:** Reddest Carbon Star

**T Lyrae**

**Y Canes Venatici:** La Superba

**For Sale**



Our SPAC utility trailer is for sale. We used it to store and transport OBS equipment for several years. We are asking \$1,800. Please contact [Jack Fritz](#) at 813 508-5680.



Meade LX200R-8 Cassegrain telescope, 2000mm FL, F10 w/various eyepieces (26-9mm), electric focuser, diagonals, filters and heavy duty tripod with case. The seller is asking \$1000 cash. There are numerous other items with this listing, so please contact [Joanne Pearson](#) via the email link provided for more details.



Also for sale by [Joanne Pearson](#) is Celestron Nexstar 6SE Cassegrain telescope, 1500mm FL, F10. Asking price \$400 cash with original tripod, various eyepieces (40mm-25 both 1-1/4 and 2"0, GSO RACI finder, barlows, eyepiece adapters, Bahtinov Mask focusing shield, and hard shell transport case. Again, there are numerous other items so please contact for more details.

**SPAC Business Meeting** 

Our next business meeting is Wednesday, April 10<sup>th</sup>, at 8:00 PM at SPC Gibbs Campus, Natural Science Building, Room 139.

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="#">Kyle Brinkman</a>	727 455-6931
Vice Pres.	<a href="#">John O'Neill</a>	727 637-5945
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Librarian	<a href="#">Ralph Craig</a>	727 384-2086
Club Webmaster	<a href="#">Chris Curran</a>	813 653-2604

Click on the name to send email

**Recognition of Patrons & Benefactors:**

Clifford B. Benham	Benefactor
Jack & Roni Fritz	Benefactor
David & Tara Pearson	Benefactor
John Stepanov	Benefactor
Gus Waffen	Benefactor
Andy Demartini	Benefactor
Charlie & Linda Hoffman	Patron
David & Rusty Richmond	Patron
Anthony Staiano	Patron
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Joe Bradley & Diane Ortiz	Patron
Kyle Brinkman	Patron
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Robert Myers	Patron
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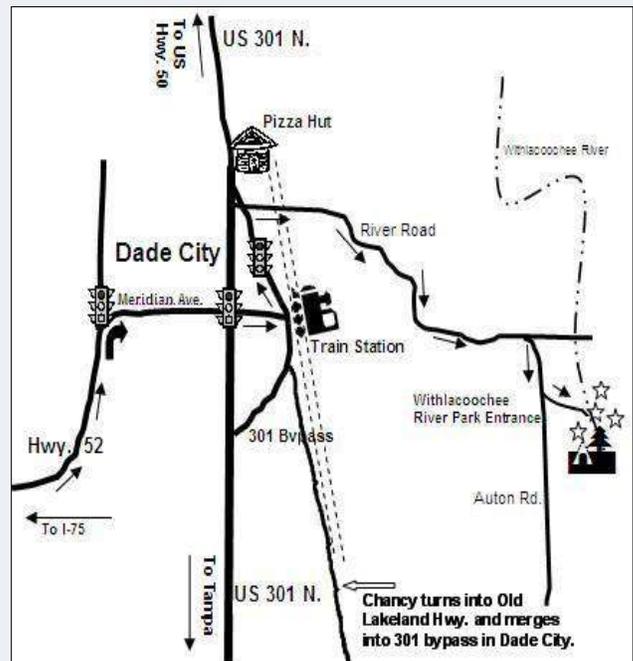
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Reporter	<a href="#">Kelly Anderson</a>	813 672-2751
In the News	<a href="#">Steve Robbins</a>	386 736-9123
Mirror Lab	<a href="#">Ralph Craig</a>	727 384-2086

**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:  
[www.StPeteAstronomyClub.org](http://www.StPeteAstronomyClub.org)



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**SPAC, INC. MEMBERSHIP INFORMATION**

Membership in St. Petersburg Astronomy Club, Inc. is open to anyone, regardless of age, who is interested in astronomy. Dues are considered donations and are non-refundable. Membership options are available as listed below:

**To join or renew your membership:**

Complete the following form and return it with your payment to: Jim Hunter - Treasurer, 17316 Oak Ledge Dr., Lutz, FL 33549-7626 - Telephone number (813) 909-7013 (checks should be made payable to SPAC, Inc.)

Name: \_\_\_\_\_ Telephone Number: \_\_\_\_\_

Spouse: \_\_\_\_\_ Children (*Under 18*): \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ St. \_\_\_\_ Zip: \_\_\_\_\_

E-Mail address: \_\_\_\_\_

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.

Student: [ ] Free. Expected date of graduation: \_\_\_\_\_

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.