



“CAPE FEAR SKIES”

Cape Fear Astronomical Society Newsletter

Wilmington, NC and Surrounding Areas

May 2019



About This Issue

April was a busy month, though skies did not usually cooperate with scheduled events.

As an aside, I stepped out one morning and, with difficulty, found the 7 stars of the Big Dipper through the haze. Overhead was a bit better but not clear. However, the National Weather Service, Clear Sky Chart and Meteoblue all predicted almost perfect skies! Sorry, but I think *I* can do better than that! Perhaps the dew point is the key. Take a look at the NWS forecast graph on the last page. Tuesday evening may be good but I bet Wednesday morning is dripping wet. Maybe foggy, too.

There are several May activities, as you can see at right. Additionally, Ceres, a Dwarf Planet, is well placed in May.

After giving it more thought, I decided that the banner above with the state and star say more about us to an outsider and so I have reverted to that design.

Lastly, on the last page you'll find a copyright notice to protect your articles and photos. I'm not a lawyer but it is my understanding that this is sufficient.

CONTENTS

Page	Article
2 -	May Full Moon at the Blockade Runner
2 -	A Fun, Quick Observing Session at Battle Acre
3 -	Wizard School at the Cape Fear Museum
4 -	Report: Cabin Lake Stargazing
5 -	Light Pollution: Taking the First Step
6 -	Ceres – Observe the Nearest Minor Planet

WHO WE ARE

The Cape Fear Astronomical Society (CFAS) of Wilmington, North Carolina was founded in 1983. We are a nonprofit organization dedicated to the advancement of amateur astronomy. Our members are not professional astronomers, just enthusiastic men, women and young people with the desire to learn, share, and explore the universe around us.

Next CFAS Monthly Meeting

Sun, May 12, 7:00pm – 9:30pm
212 DeLoach Hall, UNCW Campus

GAStronomy Meeting

Sun, May 12, 5:00pm – 6:45pm
(Dinner, prior to the Monthly Meeting)
Blue Asia, 341 S College Rd # 52, Wilmington

Next Event - May Public Star Party

May 11, 7:00pm – 9:45pm
Carolina Beach State Park

2nd Event – Full Moon Viewing

May 18, Moonrise (8:05 pm) – 10 pm
Carolina Beach State Park

May Calendar

- 2 - 3 - Moon passes Venus, then Mercury
- 4 - New Moon
- 6 - First day of Ramadan (estimated)
- 6 - Eta Aquaria Meteors (peak) Excellent moon conditions
- 11 - ★ Observing at CBSP ★
- 12 - ★ Cape Fear Astro meeting ★
- 12 - First Quarter Moon
- 16 - Omega Centauri due south at 11 PM, only 8° high
- 18 - ★ Blockade Runner Full Moon Viewing ★
- 19 - Full Moon
- 25 - Last Quarter Moon
- 25 - M51 is due north at 10:30 PM

May Full Moon at the Blockade Runner

Article and Photos by Jon Stewart-Taylor

Summary: **18 May 2019**, Lunar observing moonrise 'til 10pm at the Wrightsville Beach resort.

The Blockade Runner resort, recently reopened after repair of damage caused by last year's hurricanes, has invited Cape Fear Astro to participate in their first Full Moon event of 2019. They intend to have a special menu in the restaurant, live music poolside, and have asked us to provide moon watching expertise, both unaided eye and telescopic.

The resort plans to publicize on social and traditional media, including Facebook, Twitter, radio, television, and print. The general public will be invited, as well as people dining at the restaurant that night. And, they expect to have a "captive audience" of around 300 guests staying at the resort. Of course not all the guests will come out for the moon, but if even 10% do, that's enough to keep two or three 'scopes busy.

The observing area will be between the resort building and the ocean. There's an unloading area with a path to the lawn on the north side of the building. We may even be able to borrow a cart if you have something heavy to carry. There won't be any electricity at the observing area, so BYOBattery if you need it.

I was told that parking in the area is at a premium and meters are live until 7. We may wish to see about parking somewhere nearish then carpooling to the site. We will **not** be able to park in the resort's own parking lot.

I plan to be there with the Skyscanner 100, a pair of 10x50s, and maybe an ETX 60 if I can get it to track. If you're fond of observing the moon and would like to share it with the public, with or without equipment, please consider joining me. This could be some great exposure for the club as well as a good outreach opportunity.



Left: Portage path to observing area

Below: Panoramic view from Blockade Runner viewing area.



Above: The viewing area.

★ ★ ★ ★ ★ ★ ★ ★

A Fun, Quick Observing Session at Battle Acre

By Jon Stewart-Taylor

I issue pretty regular invitations to come observe at my house in St Helena, but thought it might be fun to try another location (as well as give people further south somewhere closer to them). So, I proposed a Friday observing session at Battle Acre, the grounds of the Fort Fisher monument.

The Battle Acre is open 24/7 with no permissions or arrangements needed, so it's a good place for a quick or spur-of-the-moment session. It's also fairly far from major sources of light pollution, so it should be fairly dark for a relatively short travel time for people in New Hanover and parts of Brunswick.

Kat Davis indicated she was interested, so on the night of, I set off with the trusty Skyscanner 100 and a pair of 10x50 binoculars. Those are both very good instruments for quick observing sessions, requiring almost no time to set up or put away, but performing quite well on bright objects and even deep-sky "tourist traps".

I hadn't observed at the Battle Acre for several years, and as it got dark I had the chance to see what observing conditions were like there now. Light pollution is less of a factor than at Carolina Beach State Park, and of course the horizons are much lower. The monument is right on the ocean facing approximately south-east. There is a large light dome in the North (up to about 40 degrees), and lesser ones to the west and south, along with some local glare-bombs. Careful positioning of local trees and hills can block most of that, especially if you go on the grounds of the monument rather than staying in the



parking lot.

Sky conditions were mediocre when we got started, but there were sucker holes, and we were able to see some stuff. Traffic at the monument was a factor. It wasn't constant, but we did get a few people pulling in or out a couple of times for the hour we were observing. At zenith, the cell-phone-based Dark Sky Meter app claimed the limiting magnitude was about 5.1 or 5.2. Your mileage may vary, especially depending on where you are on the grounds and on how much moisture is in the air.

The Skyscanner did its job well, allowing us to move quickly from one object to another while giving enjoyable views. Conditions varied, but went generally downhill, and we eventually packed it in as the transparency deteriorated too far.

It was a quick and fun observing session. If you haven't been to Battle Acre in a while, or haven't yet been at all, keep it in mind for a close 24/7 LM 5 observing possibility.

★ ★ ★ ★ ★ ★ ★ ★

Wizard School at the Cape Fear Museum

Article and Photos by Jon Stewart-Taylor

The Cape Fear Museum has a recurring program called "After Dark", aimed at adults. For their April program, they chose the theme of "Wizard School". Their implicit background was the Harry Potter universe, since their target demographic for the event would have grown up with the books and movies, but all worlds with wizards were welcome. The concept was to perform common "wizarding" tasks with Science. For example, the Sorting into Houses was done with a short psychological survey.

Cape Fear Astro were invited to participate, and I volunteered us to cover the Astronomy Tower. Unfortunately, no-one else was able to attend due to the Thursday time slot, but I knew it was a difficult day for people who work full time.

The Museum provided a table with a very nice identifying label. I added the club banner, handouts about telescopes and why the brightness of Mars changes over time, and business cards plus the Sky Scanner 100 and an ETX 60. I also brought a pocket full of "Technomancy": LED lights and a wand which could only cast one spell ("Lumos Rectos") but could cast it over and over at the push of a button (i.e., green laser pointer).

We got a pretty good spot, right at the center of the garden, in between the Sorting Table and the UNCW Qwidditch team, and near the drinks and food truck. The majority of the stations were inside, but I was kept busy enough I didn't have a chance to see what they were. I did notice people emerging wearing pointy hats they hadn't arrived with, and holding potions vials.

In keeping with the Harry Potter theme, I'd created two handouts.. One titled "Ye Arithmancie & Alchemie of ye Ancient & Modern Telescope" (covered the basics of refractor and reflector telescopes). The other, "How to annoy ye Centaurs -or- Why Arithmancie, not Divination Means Mars is Not Bright Tonight," included two orbital diagrams, one showing Earth and Mars at their nearest,

the other showing them at their furthest. For that one, I added the note that "Ye Planets & Orbits are not to scale".

I'd guesstimate that while it was light, between 20-30 people stopped by to check the handouts and scopes. Most of those, plus a few passers-by said they'd be back after dark. During daylight the scopes were pointed at the local clock tower. Visitors noticed that the clock face looked bigger through one scope than the other. I explained that the two scopes were about the same diameter and length, so most of the difference was due to the eyepieces.

After dark the weather was not at all cooperative. The sky was "sucker holes" at best, with high haze behind the lower clouds. The local lighting at the Museum is very good: Full cut-off fixtures, in sodium vapor to make it easy to filter out. However, there are at least 4 or 5 fixtures visible from the garden, plus at least 3 glarebombs from Wilmington streetlighting.

I did manage to get Sirius in the Sky Scanner at about 8:30, and maybe a dozen people looked at it during the remaining 1/2 hour of the event. Even in the wide field of the Sky Scanner, I had to recenter, and used that as a lead-in to my usual discussion of watching the earth rotate through the 'scope. One of the bystanders objected that the Earth was flat. I went Diskworld on them, and pointed out that the earth still rotated around the Hub.

All of the handouts were given away. Quite a few people recognized Cape Fear Astro as doing public sessions at Carolina Beach State Park, and said they really wanted to go to the next one. Quite a few business cards were distributed: "They have our e-mail and web page on them. The Internet is a Magic like no other!

The final total from CFM was 250 visitors over the whole night. I'd say less than a quarter of that interacted with the Cape Fear Astro station, but that's still pretty successful.





★ ★ ★ ★ ★ ★ ★ ★

Report: Cabin Lake Stargazing

Article and Photos by Jon Stewart-Taylor

As you may know from previous issues of Cape Fear Skies or the Cape Fear Astro e-mailing list, we partnered with Cowan Museum, Duplin County Public Library, and a handful of other Duplin organizations on a public astronomy event: Stargazing at Cabin Lake. It was the museum's first major public astronomy event, and Cape Fear Astro was deeply involved with the planning from the very beginning. It was at Cape Fear Astro's suggestion that the Museum reached out to the other partners.

I made three trips to the site before the event. The first was months before the target date. I met with Park, Museum, and Library staff to scout the grounds of the park and identify locations for various activities. During this visit two possible locations for observing stood out: the parking lot at the boat ramp, and the causeway across the dam.

I made the second visit to the park after sunset a few weeks later. This visit was to evaluate the two possible observing sites for darkness, horizons, and safety. For the first two categories the causeway was clearly superior. In the end it was just too narrow to safely accommodate a crowd of people in the dark. The parking lot was still better than the narrow slot we get at Carolina Beach State Park during the State Wide Star Party events. Not a lot, but better.

The final visit was about a week before, to help the Museum staff learn to use the brand-new Skyscanner 100 table-top Dobsonian they purchased for the event. Sky conditions weren't great, but they picked up on the basic concepts pretty quickly (aligning the unit-power finder, using low-power eyepieces while finding objects, alt-az motions, and using the red dot to locate visible objects). We were able to see some bright tourist traps between sucker holes, though everything was sadly diminished through the haze.

As the day of the event neared, I received notice from the Museum that they were putting out considerable publicity efforts, and were starting to receive feedback about the potential number of people who might attend the event. Although it was still early, and turnout is always

affected by the weather, it was possible there would be hundreds of people looking through our scopes.

At that point I posted a panicked call for help on the e-mailing list. I received a positive and a tentative response, so there was a reasonable expectation of 4 telescopes the night of the event. I notified the Museum and kept a nervous eye on the weather forecast.

The day of the event, the Clear Sky Chart was pretty optimistic, showing a break in the clouds beginning at around 8. That would leave us about an hour and a half of good observing.

I arrived at the park at 6 to start setting things up, and Skip beat me there by about 5 minutes. At that point the sky was fully cloudy. Trusting the CSC, we went ahead and started setting up anyway. Skip had paired refractors on an iOptron mount, plus a little spotting scope on an itty-bitty tripod. I had the 10" Coulter dob, plus the solar system model, and a club table with the banner, business cards, the new "what did I see" card, and various books, all illuminated with red lights so people could see them after dark. The Museum set up the Sky scanner. We even got a "civilian" who brought a slightly-better-than-Christmas-trash 4" Newtonian on a spindly equatorial mount.

The park staff really threw themselves into the preparations and the event. They had staff on hand to direct parking, and set out nearly 100 battery-operated tea lights (red!) to mark paths and hazards. They were supportive and available at all times.

Skip and I both need to make and follow "packing for observing session" checklists. I forgot my steps for kids to reach the eyepiece, and Skip forgot the counterweights. Fortunately the Museum could lend me a short step-stool, good enough for all but the smallest kids. Skip was able to put the second refractor on the other side of the iOptron to balance the mount.

At first, there was hardly anyone visiting us. The Library's activity stations in the nearby picnic pavilion kept all the families with kids busy till well after sunset. While waiting, I helped the civilian with their scope. Their unit-power finder battery was dead: I installed a spare. Then it was mostly advice and guidance to work around the scope's shortcomings, how to align the scope and finder, and so on.

About then, the Library activities ended and the swarm descended. Fortunately by this time the sky had cracked into sucker holes and there were things we could show people. As the evening went on the lines at the 10" varied from 5-15 people long. The conditions continually improved. By 8 it was quite good. Dew was falling, but it's spring in SE NC, so dew was no surprise.

I started with Sigma Orionis. I could hear Skip talking, but was too busy to hear what he was saying. The Museum people were coping as best they could, and even the civilian was showing people something. After Sigma, I went to the Pleiades, M42, M35, and finally Mizar and Alcor. In the middle, I did the laser-guided constellation tour, using Orion as the guidepost to most of the winter constellations. That seemed particularly well received.

Soon it was after 9:30 and most of the families took their kids home to bed. A few stragglers were telescoped out, so I took them through the solar system as far as Jupiter. Then it was all over but the packing up.

This was an excellent public event, especially for a first try by the Museum and other Duplin institution. It was well organized, well run, and well attended. It is a little disappointing that only two Cape Fear Astro members were able to come, but it's understood that Duplin is pretty far for many members to travel, and the weather was a question.

If we had had more members, I think we could have offered more to the public. Although additional 'scopes would have been welcome, our lines weren't so long as to be unmanageable. Non-scope members to act as greeter at the club table and as guides for the solar system and constellation tour would have allowed us to offer more varied activities. But, the core of the evening was observing, and that we had covered.

I haven't heard back from the Museum about how they think the night went, but they're very busy, with 4 more NC SciFest events in the next 3 weeks. I'm hoping that the event will be repeated next year. It's a great opportunity for all the groups involved, especially the public



★ ★ ★ ★ ★ ★ ★ ★

Light Pollution: Taking the First Step

By Jon Stewart-Taylor

Everybody talks about Light Pollution, but astronomers, professional and amateur, need to do something about it. As the new LED lighting is installed, it's even cheaper and easier to over-light, and without proper fixtures, the extra light will escape upward and increase light pollution.

As part of my personal effort to help curb light pollution, I introduced a resolution at the Saint Helena village council. St. Helena is not a large town (population under 500), but if we can make it happen there, we can try again on larger scales.

At tonight's council meeting, I submitted a page of definitions, and a resolution. To wit:

Definitions

- ★ Light Trespass: Light which travels beyond the boundary of the property on which it is created.
- ★ Glare: Light Trespass which shines directly in the eyes of inhabitants, pedestrians, or drivers, impairing night vision.
- ★ Light Pollution: Light Trespass which negatively affects animals, plants, or people's activity at night.
- ★ Sky Glow: Light Pollution which impairs view of the night sky.
- ★ Lighting Ordinance: an enforceable document setting out the standards for outdoor lighting to control Light Trespass, Glare, and Light Pollution.

Resolution

In order to improve safety and security, to reduce or eliminate the growth of light pollution, and to preserve the rural characteristics and heritage of St. Helena, a committee will be created to create and propose for adoption a lighting ordinance defining outdoor lighting standards and enforcement in the village of St. Helena.

I'll post updates in Cape Fear Skies on progress (or lack thereof).



See Ceres, a Dwarf Planet, in May
by Karl Adlon

Dwarf Planets is a major topic for the Science Olympiad competition that I have been helping St. Mary's School students prepare for and, in the process, learning more about them myself. That and the Sky & Telescope (S&T) recent article, "Ceres at Opposition", which can be found at the below link, prompted this article.

https://in-the-sky.org/news.php?id=20190529_13_100

A good source of information is NASA's website for the Solar System: <https://solarsystem.nasa.gov/solar-system/our-solar-system/overview/>.

There are 5 Dwarf Planets: Ceres, Pluto, Haumea, Makemake and Eris according to the International Astronomical Union.



Select Data:
Ceres' Magnitude:
7.6 on May 1
7.0 on May 30
Ceres apparent diameter:
0.70 arc-sec. on May 1
0.74 arc-sec. on May 30

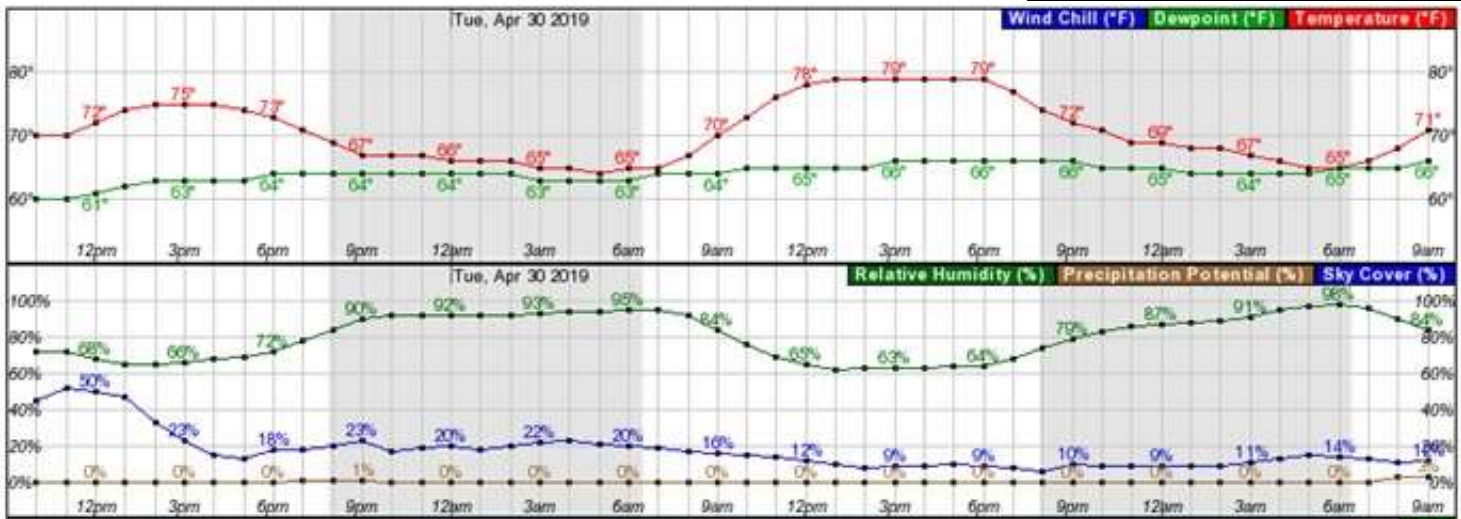
For reference, Saturn's Titan
Magnitude: 8.6
Diameter: 0.76 arc-sec.

Star Wars' Death Star? No, but NASA's article at <https://solarsystem.nasa.gov/resources/151/flying-by-the-death-star-moon/> is titled Flying by the "Death Star" Moon.

How to observe Ceres and what to expect:
As you can see from the text box info, Ceres' apparent diameter is tiny; about the same as Titan. If you are pointed in the right location, you may be able to tell Ceres from stars by its slightly fatter appearance (excellent skies required) or by its movement over an hour or more.

If you are so equipped, try imaging. Below is taken, as posted on Cloudy Nights, by Thomas Ashcroft with a C14 over 1.5 hours.

May and early June is your opportunity to nab a Dwarf Planet!



Copyright © 2019 Cape Fear Astronomical Society. All rights reserved. For permission requests, write to the Society, addressed "Attention: Permissions Coordinator," at the address below.

CFAS Correspondence:

Please contact the society at: CFAS, P.O. Box 7685, Wilmington, NC 28406
Members are welcome and encouraged to submit articles or other input for "CAPE FEAR SKIES". Submit any and all interesting items for publication to Karl Adlon, Editor (email kmja79@yahoo.com).

CFAS Officers:

Officers

- President: Terry Herrin
- Vice-Pres: Jon Stewart-Taylor
- Associate VP: Billy Kidney
- Secretary: Scott Spike
- Treasurer: Ben Steelman

Chairpersons

- Web Master:

Contact Us:

You can contact CFAS at info@capefearastro.org

Our website is <http://www.capefearastro.org/>

