CAPE FEAR Skies

Monthly Newsletter
Cape Fear Astronomical Society
Serving Wilmington, NC and Surrounding Areas

Cape Fear Astronomical Society is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code.

January 2022

President's Report

by Jon Stewart-Taylor

I was looking at the constellations a few days after Christmas, watching winter and early spring rise in the east. First watching Taurus lift the Pleiades and Hyadese high in the sky, then Orion and Gemini follow them. By midnight Canis Major and Minor were high, and Leo was completely above the horizon. The Big Dipper was standing on its handle, signaling the start of Galaxy Season. It reminded me why i'm in this hobby: The night sky is so beautiful, and we're privileged to be able to see it and learn about it.

Many thanks to George, Roberta and Steven for hosting the holiday celebration this year. It was a lovely evening with good food and good company. We held a brief business meeting to hold elections, and to no-one's surprise the slate of unopposed officers were elected. I'll be returning as President, Skip as VP. Karl will take over as AVP while George slides over to Secretary. Ben remains as Treasurer. Thanks to all these folks for stepping up to fill these offices so our club can continue to serve us, the members.

Thanks also to Bill Cooper and Buzz Tucker. Bill has put in a long stint as secretary, and contributed in a big way to the development of the club observatory. Buzz has lead by example, putting in a lot of work on the observing field and carpentry for the use and expansion of the shed. The observatory has come a long way this year, and they've helped a lot.

Our next club meeting is planned to be in-person at DeLoach Hall, simulcast via Zoom. However, with COVID cases increasing, we'll have to get final permission from the UNCW people to ensure it's safe. Keep an eye on the E-mailing list for updates.

Our plan is for Karl to do a brief presentation of a video he likes the look of, and then to do our Annual Meeting. This will be your chance to let us know what we as a club are doing well, what we can improve on, and if there are any new areas into which we should expand.

Calendar

The November Meeting is planned to be in person (please wear a mask) and be via ZOOM.
Observing events, being outside, shall continue at this time.
Please watch your email for the most up to date information.

January 2022

Date – Event – Time

01 Club Observing @ the Club Observatory; Shiloh Road Ivanhoe NC; 05:00 PM

02 New Moon 18:35 UTC

03 Quadrantids Meteors 21:00 UTC ZHR 120; 1 Day After New Moon

04 Earth at perihelion 03:00 UTC Earth is closest to the Sun

07 Mercury at easternmost elongation; 19 deg from Sun; 11:00 UTC

09 First Quarter Moon

09 ★ Cape Fear Astro Monthly Meeting ★

NO GAStronomy Meeting this month!

CFAS Monthly Meeting - 7:00pm – 9:30pm

212 DeLoach Hall, UNCW Campus

and via Zoom

17 Full Moon

21 Club Observing @ the Club Observatory; Shiloh Road Ivanhoe NC; 05:30 PM

22 Club Observing @ the Club Observatory; Shiloh Road Ivanhoe NC; 05:30 PM

25 Last Quarter Moon

28 Club Observing @ the Club Observatory; Shiloh Road Ivanhoe NC; 05:30 PM

29 Club Observing @ the Club Observatory; Shiloh Road Ivanhoe NC; 05:30 PM

Astro phenomena from: https://www.universalworkshop.com/astronomical-calendar-any-year/

Associate Vice President's Report

by Karl Adlon

I went out one recent morning about 6 AM to enjoy the "early for some people" morning, looked up and there was the Last Quarter Moon. Beautiful in the brightening blue sky! I thought "if I could have come out a little earlier, I could be looking at it through my scope." So I enjoyed it naked eye (well, I do wear glasses).

Now that I'm back in the AVP saddle, a reminder that I'm always looking for others to **give a Presentation**. A few have volunteered and I have a few ideas, but more is better. Or do you like my Presentations that much? Seriously, you don't need to be an expert on a subject, just have an interest.

Help! A Beatles song and movie, yes, but I'm thinking more along the lines of help us help you. The easiest way to get help is to ask. Ask a Board Member. Ask me. Of course I don't have all the answers, but I know lots of places to get answers: the other Board Members, other outside of our club and the internet. *That reminds me, I used to find things on work's mainframe computer and people would ask "how did you find that?"*

Last year: 2 BAD things and 1 GOOD thing. This year I'm wishing for 0 BAD things and if it's 0 GOOD things, I'll take it! Happy New Year!

A Few Things to Look for in 2022

by Karl Adlon

Mar. 28 (Monday) – April 3 (Sunday) – Staunton River Spring Star Party
April 8 (Friday) and April 9 (Saturday) – NC Statewide Star Party – 6.8 day old moon
May 15 - Total Lunar Eclipse – Sunday/Monday with totality at 12:11 a.m.
Aug. 26 (Friday) – Aug. 30 (Tuesday) – Almost Heaven Star Party
Oct. 23 to Oct. 30 – Peach State Star Gaze
Nov. 8 - Total Lunar Eclipse – Tuesday Morning with totality at 5:59 a.m.
Nov. 30 - Mars closest to Earth – 17.2 arc sec disc

WONDER

by Karl Adlon

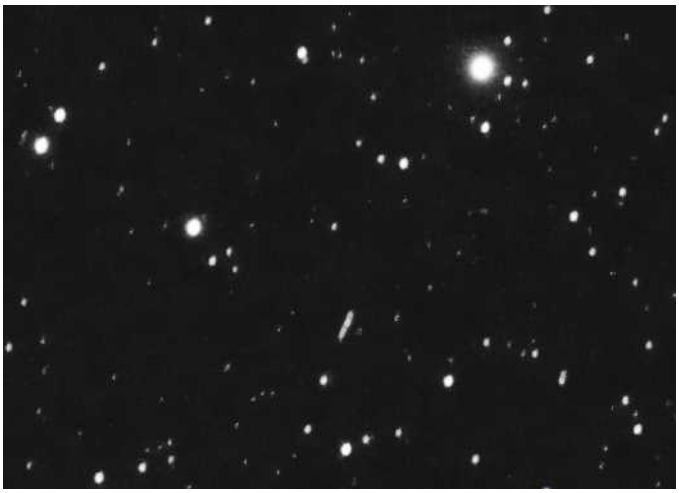
"We should always endeavor to wonder at the permanent thing, Not the mere exception. We should be startled by the sun, and not by the eclipse." -G. K. Chesterton

We pretty much know eclipses. We know why they occur and we can predict when and where they will occur and what kind they will be.

On the other hand, there is much about the sun which (barring clouds) we see daily but don't fully understand and we therefore theorize about.

The light we see today was born as a gamma ray in the sun's core about 170,000 years ago and takes a random path, becoming UV light and then visible light before reaching the surface and traveling the 8.5 minutes light travel time to reach the Earth.

To me, it's a wonder.



JWST

"I have been able to get images of JWST for 3 nights. Here is the latest 5 minute image at a distance of 321,000 miles! [WO FLT-132 & QHY268M at 925mm FL]"
-"Aerostar90509" on Cloudy Nights, taken 12-28-2021

JWST

-Karl Adlon

1968 was pretty crappy – except for the Apollo 8 triumph.
2021 was pretty crappy – except for the James Webb Space Telescope launch and performance thus far.

January 2022 Presentation
Two Popular Sky Guides I Find Interesting

by Karl Adlon

When I see something in the night sky and want to know what it is or when I can't locate from memory an object I'm looking for, there is one guide I keep in my eyepiece case and that's the first guide I'll talk a bit about.

And when I want to be reminded of sky targets, there's a second guide I use. I stumbled on a very interesting video about its creation and the two creators of the guide and I'll show portions of the video. I'll also give the video web address for those who want to see the approx.1 hour long (worth the time) video.

Take a Look!

by Karl Adlon

From the Star newspaper: “Florence made landfall near Wrightsville Beach on Sept. 14, 2018, as a Category 1 hurricane. While the storm surge caused major damage along the coast, slow-moving Florence dumped record-breaking amounts of rain for several days as it moved inland.”

Florence resulted in sever school damage resulting in students being behind in studies which resulted in me Coaching the Astronomy portion of their Science Olympiad participation.

I thought you would find what they are looking to learn interesting.

SCIENCE OLYMPIAD

SOLAR SYSTEM

See General Rules, Eye Protection & other Policies on www.soinc.org as they apply to every event.

1. **DESCRIPTION:** Students will demonstrate an understanding and knowledge of **planet formation and structure** in our solar system and how it relates to that observed in **extrasolar systems.**
   A TEAM OF UP TO: 2 **APPROXIMATE TIME:** 50 minutes
2. **EVENT PARAMETERS:** Each team may bring two 8.5” x 11” sheets of paper that may contain information on both sides in any form and from any source. This information may be used during any part of the event.
3. **THE COMPETITION:**
   a. Participants must be knowledgeable about the different types of terrestrial **and gaseous** planets, **moons, and minor bodies** in the Solar System, their **formation, structure, and properties,** and the typical surface and **atmospheric** features of these planets as they appear on diagrams, plots, maps, or images.
   b. Participants must be knowledgeable about the **formation, structure, and properties** of various types of **terrestrial and gaseous exoplanets**, **including, but not limited to: hot Jupiters**, **mini-Neptunes, and super-Earths,** and be able to **compare and contrast them with those of the Solar System planets.**
   c. Participants must be knowledgeable about the **details of the formation, structure, and properties** of the objects listed below. If applicable, they may be asked to identify and analyze surface **and/or atmospheric** features on these objects as they appear on diagrams, plots, maps, or images.
      i. Solar System Objects: **Venus, Jupiter, Saturn, Uranus, Neptune, Io, Iapetus, Triton, Pluto, Arrokoth (2014 MU69)**
      ii. **Extrasolar Systems/Planets: HL Tauri, HR 8799, Kepler 138, K2-18b, K2-33b, TOI-561**
   d. Participants may also be tested on the following topics:
      i. Planet formation and internal and atmospheric structure and evolution of terrestrial **and gaseous** planets within **and beyond** the Solar System.
      ii. Scientific questions addressed by relevant planetary missions and observatories, including, but not limited to: **Magellan, Galileo, Juno, Cassini, Voyager 2, New Horizons, ALMA, Kepler, and TESS**.
      iii. **Qualitative understanding of orbital mechanics and gravitational interactions between objects, including, but not limited to: Kepler’s Laws, planetary migration, and tidal forces.**
      iv. **Exoplanet detection and characterization techniques (limited to transits, radial velocity, and direct imaging).**
      v. **Internal, surface, and atmospheric compositions and structures for each of the objects outlined in (c).**
4. **SAMPLE PERFORMANCE TASKS:**
   a. Given a set of images of a particular feature, identify the specific name of the feature, how old that feature might be, and explain how the feature was formed.
   b. **Describe the internal structure of an object and explain how this internal structure was determined from spacecraft data.**
   c. **Given radial velocity and transit data for a hypothetical exoplanet, compare and contrast its likely physical properties and formation mechanism with a given planet from our Solar System.**

Astronomical League Update

by Hank Lyon
Astronomical League Correspondent (ALCor)
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www.astroleague.org

In the midst of all of the holiday food and festivities, hopefully you've been able to carve out a little time for the current issue of *Reflector* magazine. As we look into 2022 and reflect upon League accomplishments in 2021, we're reminded of the value the AL brings to its 310 member societies and the League's collective efforts in promoting the science of astronomy through education, communication and incentives for astronomical observation and research. While you contemplate the new year, don't forget that the AL 2022 Calendar is in press. A visit to the AL Store (link above) and $13 gets you a copy and helps you stay abreast of upcoming AL functions and astronomical events.

There are many actions and events to look forward to in the upcoming months. While there is no firm schedule yet regarding roll out, League Council has approved a substantial investment in the AL's new website. Part of this effort is to address the AL's international reach. We can expect to see more about website migration and update of content as the year unfolds.

You might have noticed the December *Reflector* read a little longer than past issues. This is due to the December issue being a pilot for possible permanent expansion of the magazine; an additional four pages are contemplated. The AL reminds all member societies that they are always seeking ideas for articles so if any topic comes to mind, don't hesitate to let editor Kristine Larsen (larsen@ccsu.edu) know about it.

The AL has announced ALCON 2022, which is now scheduled for July 28-30 in Albuquerque, NM. At the present time, this conference will be "in-person"; however, due to the overwhelming success of ALCON 2021 Virtual, there are likely to be virtual components which will greatly expand the reach of the conference. A website for the conference should be up and running shortly.

Our club roster update is due to the AL by January 15th. Please let me know at your earliest convenience if your physical or email address has changed since last reported to CFAS. I'm required to pass along periodic updates to the AL to ensure our membership continues to receive each quarterly *Reflector* issue. If you missed the last mailing or wish to have an electronic copy of the current issue, please use the link below:

https://www.astroleague.org/reflector/december-2021-reflector-magazine

Lastly, let's not forget one of the great values of our affiliation with the AL, the Observing Programs. These cover a wide variety of astronomical topics/interests and are an excellent way to organize and track your observation efforts. Explore these programs below:

https://www.astroleague.org/observing.html

Happy New Year everyone and please reach out to me if you need any assistance with any of the AL programs, resources or simply wish to learn more about the AL.

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).

Cape Fear Astronomical Society is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code.

CFAS Officers:

President:	Jon Stewart-Taylor
Vice-Pres:	Skip Hagers
Associate VP	Karl Adlon
Secretary:	George Pappayliou
Treasurer:	Ben Steelman
ALCor	Hank Lyon

Dues: Dues for 2022 are $25 for Individual and $32 for Family Membership. Students dues are $5 per year.

Mail to :CFAS, P.O. Box 7685, Wilmington, NC 28406

Contact Us:

You can contact CFAS at info@capefearastro.org

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