



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.*

March 2023

President's Message

by Ben Steelman

People have been looking at the Andromeda nebula (M-31) through telescopes almost since Galileo's time. But it is only recently that a mysterious gas cloud has been discovered near Andromeda.

And here's the kicker: the cloud (OK, call it a nebula) was found by three French amateur astronomers. Marcel Drechsler, Xavier Strottner and Yann Sainy were taking extremely long-exposure digital photos of Andromeda's neighborhood, using a filter that blocked all light except for the blue-green glow of ionized oxygen.

What they found was a large gaseous structure nearly the size of Andromeda itself -- and when Sainy used his hydrogen filter on it, it appeared to contain no hydrogen at all.

Five professional observatories later confirmed the trio's discovery, christened SDSO-1. Nobody as yet has any idea what the cloud is, exactly, or how it formed.

This news item underlines one of the joys of the hobby. Astronomy is one of the few remaining areas in science where dedicated amateurs can still make original discoveries and significant contributions.

It's well known that most new comets are discovered by amateurs and for various reasons -- clear skies, Southern Hemisphere position, etc. -- Australians seem to lead the way. William Bradford, a rocket engineer with the Australian defense department, who died in 1966, held a modern record with sole credit for finding 18 previously unseen comets. Terry Lovejoy, an Australian IT specialist, holds the current record with seven.

As long as Starlink and light pollution don't spoil the viewing -- and that's a topic for a whole other rant -- there's apparently plenty left to be found. As the late Jack Horkheimer always used to say, keep looking up.



*The OIII emission nebula Strottner-Drechsler-Sainy Object 1 appears next to M31 as a banded teal arc in this HOLRGB image.
Marcel Drechsler/Xavier Strottner/Yann Sainy*

Calendar

March 2023

Date – Event – Time

- 02 Venus 0.5 deg from Jupiter
07 Full Moon
12 “Spring forward”; Daylight savings time begins
12 ★ Cape Fear Astro Monthly Meeting ★
CFAS Monthly Meeting - 7:00pm – 9:00pm
212 DeLoach Hall; UNCW
Also simulcast via Zoom
15 Last Quarter Moon
17 Club Observing @ Starfields (the Club Observatory);
7:00 PM; 3rd Quarter Moon
18 Club Observing @ Starfields (the Club Observatory);
7:00 PM; 3rd Quarter Moon
20 March Equinox; Northern Spring)
20 Staunton River Star Party; Staunton River State Park VA;
ends Sunday the 26.
21 New Moon
22 Jupiter 0.5 deg from Moon
24 Club Observing @ Starfields (the Club Observatory);
7:00 PM; New Moon
24 Moon and Venus 10:00 UTC Venus 0.1
deg from Moon
25 Public Observing; 06:15 PM; Public Observing
Session; starts at sunset; Carolina Beach State Park
25 Club Observing @ Starfields (the Club Observatory);
7:00 PM; New Moon
29 First Quarter Moon
31 Venus 1.3 deg N of Uranus

Astro phenomena from:

<https://www.universalworkshop.com/astronomical-calendar-any-year/>

2023 Public Events

Watch this space for 2023 Public Events. If you haven't done one before, perhaps make a New Year resolution to try on – you might like it!

April 21 – State Wide Star Party, CBSP

April 29 – CBSP

May 27 – CBSP

June 24 – CBSP

July 22 – CBSP

August 26 – CBSP

September 23 – CBSP

October 21 - International Observe the Moon Night – Location TBD

October 21 – CBSP

CBSP = Carolina Beach State Park

2023 Monthly Meeting Dates

April 2, 2023 (Next week is Easter)

May 7, 2023 (Next week is Mothers' Day)

June 11, 2023

July 9, 2023

August 13, 2023

September 10, 2023

October 8, 2023

November 12, 2023

December 10, 2023 (Date and time may change for Holiday Celebration)

Special Interest Groups (SIGs)

Usual meeting dates – watch emails for exceptions

Phenomena: First Wednesday

Both Eyes: Second Tuesday

Telescope Usage: Third Tuesday

New Astronomer: Third Wednesday

Outreach: Fourth Tuesday

Canopus

by Karl Adlon



At 8 PM EST, Canopus is just visible about 3.3° above the horizon due South.

It is the 2nd brightest star in the sky; Sirius being the brightest.

Canopus's brightness and location well off the ecliptic make it useful for space navigation.

Many spacecraft carry a special camera known as a "Canopus Star Tracker" plus a Sun sensor for attitude determination. Mariner 4 used Canopus for second axis stabilization (after locking on the Sun) in 1964, the first time a star had been used. - <https://en.wikipedia.org/wiki/Canopus>

- **MARINER IV Mars probe finally locked its sensor on the star Canopus after fixes on three wrong stars.** Jet Propulsion Laboratory officials noted that picking up wrong stars was not critical in the early stages of the flight. If the MARINER IV had not dropped these wrong fixes of its own accord, the action could have been commanded from the ground. Only if Canopus were in the sensor's sights would the TV camera be aimed at the Martian surface when MARINER IV flew past the planet 7½ months

From: United States National Aeronautics and Space Administration. Scientific and Technical Information Division (1965). Astronautics and Aeronautics, 1964: Chronology on Science, Technology and Policy. Scientific and Technical Information Division, National Aeronautics and Space Administration. p. 398.

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from now; only with Canopus in view would scientists know the spacecraft's attitude with the precision needed for a midcourse rocket firing of maximum accuracy to refine the course of the trajectory and bring the MARINER IV within about 8,600 mi. of Mars instead of the presently anticipated distance of 151,000 mi. (Miles, *Wash. Post*, 11/30/64; Witkin, *NYT*, 11/30/64, 1; *National Observer*, 11/30/64; Witkin, *NYT*, 12/1/64, 1)

Moon, Jupiter & Venus

by Karl Adlon



Time A bit after sunset
Latitude Approx. 34.5° N
Photographer Jon Stewart-Taylor

About 13 hours later
Approx. 15° S
A friend of a friend in the Philippines

The differences in locations is evident in the two pictures.

A Few Apps & Books

by Frank Rich

Editor's Note – Frank sent a couple of emails and I used them to compose this article.

I was surprised when we had our impromptu star party with Kat, that she was not familiar with the app I use to Polar Align in Daylight, then fine tune at night with Polemaster. So i thought I might list the apps I use:

- **Polar Scope Align** -(IOS Yes; Android No) Can get you close to alignment day or night.
- **Clear Outside** -Great to show cloud cover and weather at your site for a week in advance
- **Atmospheric** -Great weather site
- **Light Pollution Map** -Shows Bortle levels for various areas. <https://www.lightpollutionmap.info>

Speaking of great astronomy aids. I read the following and highly recommend

1) **The Deep Sky Image Primer** 3rd Edition. A must if you want to learn astrophotography.

Written by Charles Bracken

2) **Navigating the Night Sky** by Guilherme de Almeida.

3) **Turn Left at Orion** by Guy Consolmagno

Comet C/2022 E3 (ZTF)

by Karl Adlon

The comet is now dimmer than magnitude 8, so I doubt anyone will be observing any more and I've thought I'd do a little wrap-up in reverse chronological order.

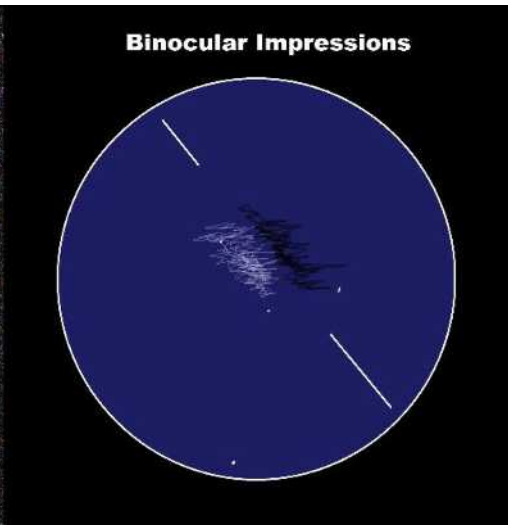
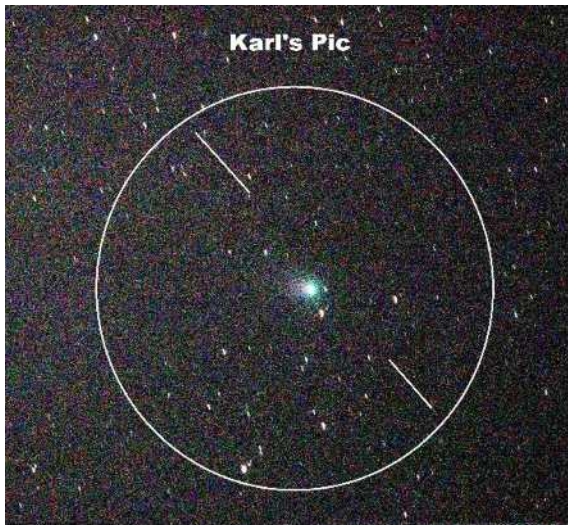
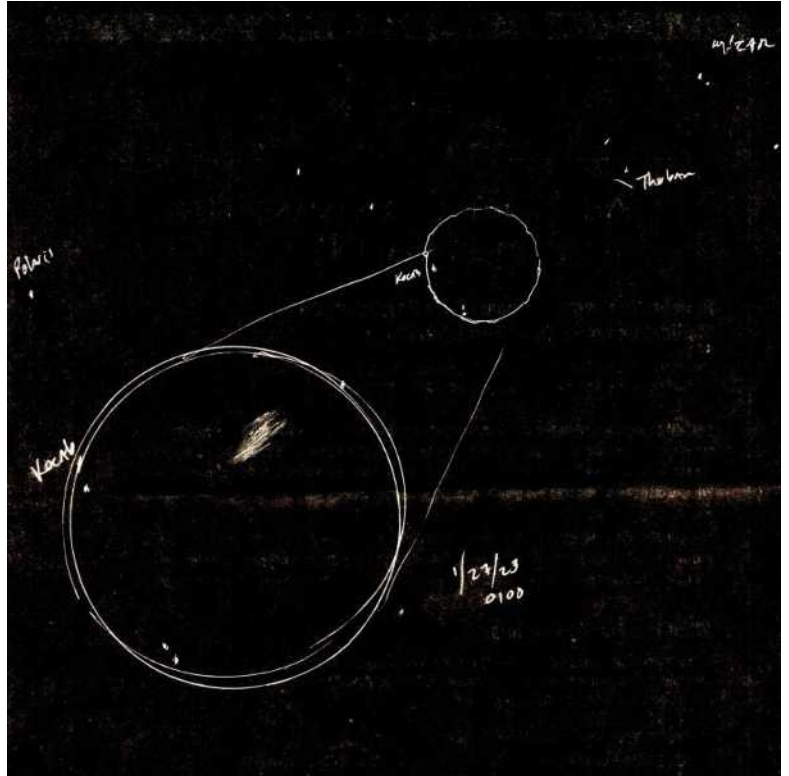


Sunday 2/26, Steve Hilliard sent this shot at left. As Yoda might say: "Fading it is!"

Early a.m. 1/27; J. Thad. Coin:

Well, for what it's worth this is my quick messy drawing using the unprinted side of scrap paper. It shows the position relative to the 2 brightest stars of Ursa minor (cup of dipper) and the wide, more naked eye position of the field in relation to Polaris and Mizar (handle of Big Dipper).

Consider that the comet apparition appears with a lot of artistic license. With many gazes using averted vision I couldn't be certain of the orientation, but the position was close. It fit well with the finder chart. By 5am it had clearly moved a little bit. I could not convince myself that it was brighter than the sky by naked eye (not visible).



1/20, J. Thad Coin

I was shocked when I saw your (Karl's) pic. The sharp distinction between the coma and space east of the leading edge stood out, particularly with averted vision.



2/20, Karl

I woke up a bit after 4 AM, looked out the front window and, to my surprise based on the forecast, saw a star.

I debated about it a while, then checked the comet location on Stellarium, got dressed, grabbed my binoculars and went out the back door.

Sky conditions were not as good as I was hoping for. Even in the 15x70 bins the sky background was murky. Sweeping around I came across a bright patch that could have been it. I swept around some more but only came back to the bright patch. Concentrating on it I could see it was a little elongated. Moving the view

perpendicular to elongation made it a bit clearer. Yes, this was the comet.

So I got my Canon T7i, telephoto and tripod, I started taking shots in the general area. I found a blue-green spot and zoomed in on it. I used the highest ISO (25,600) and various exposures from 10 to 6 sec and various zoom focal lengths. This one (which happens to be the last one I took) is ISO 25,600; F5.6; 6 sec at 222mm.

Yes I did some image processing and cropped it just a little. There still some light pollution background and star trails since I just mounted the camera on a tripod, not equatorial mount.

COMmEnTary

“It was the best of times, it was the worst of times, ...” -Charles Dickens, “A Tale of Two Cities”

When the media said: “Last Chance to see the Green Comet” you would have thought the comet was 1) better than any comet since humans recorded seeing comets and 2) you could actually see the comet’s green color!

In actuality, the comet was rather dim; certainly much dimmer than Comet NEOWISE from a year and a half ago, which was easy naked eye from the back yard. This comet was invisible to the naked eye, was a faint, fuzzy blob in binoculars and did not present and color to the eye. Only cameras would show the green color.

Like so many comet predictions in the past, this comet lived up to the least impressive predictions and not the best case hyperbolic scenarios. Unfortunately, once again we (unfortunate) amateur astronomers were left have to bring the public’s high-flying hopes (crashing) down to ground.



This image is from TeleVue’s blog.

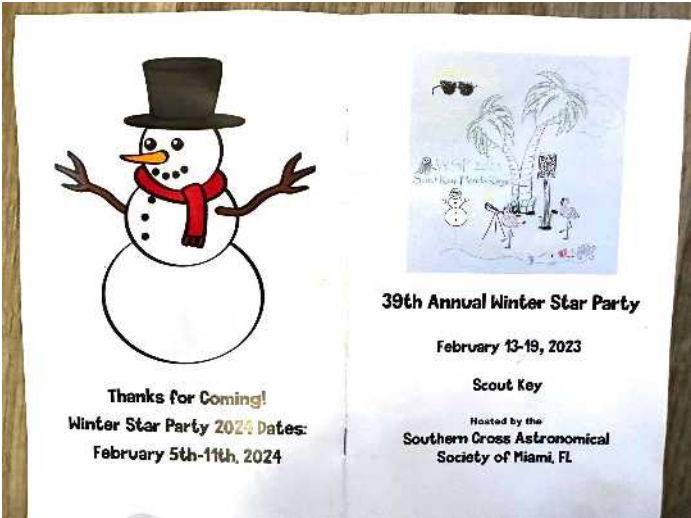
By Michael Stark

From northern California, Michael used our Tele Vue-NP101is APO refractor (mobile site) and a full-frame DSLR camera to capture the long tail of the comet that overlapped the blue ion tail, the green glow around the coma, and the stubby antitail appearing to the right of the coma. To gather all this detail required an hour-long exposure taken one minute at a time.

(This is not how it looks to an observer at the eyepiece!)

2023 Winter Star Party and KSC Visit

by Kat Stewart



You can't tell the players without a Program.



Alexis (attendee) & Pam Shivak, who worked at the event.



Guest speakers Richard S Wright on "The future of Astrophotography".



T-Shirt memory.
And proof she was there!



Kennedy
Space
Center



Statue of Alan B. Shepard



Get to Know YOUR Astronomical League



The Astronomical League (AstroLeague or AL) is one of the largest amateur astronomical organizations in the world. The organization serves to encourage an interest in astronomy (especially amateur astronomy) and promote the science of astronomy by:

- ✓ fostering astronomical education;
- ✓ providing incentives for astronomical observation and research;
- ✓ assisting communication among amateur astronomical societies.



CFAS is one of over 300 member societies affiliated with the AstroLeague. Your membership in CFAS allows you take full advantage of this relationship so periodically review the information below to see how the AstroLeague can support your astronomical interests and endeavors.

AstroLeague Home Page	www.astroleague.org
AL Observing Programs List	https://www.astroleague.org/al/obsclubs/AlphabeticObservingClubs.html
AL Observing Program Manuals	https://store.astroleague.org/index.php?main_page=index&cPath=1
Astro Notes <i>(Info and Tools for Amateurs)</i>	https://www.astroleague.org/al/astnote/astnotes.html
Seeing and Transparency <i>(Simple AL Guidance)</i>	https://www.astroleague.org/content/seeing-and-transparency-guide
Current and Past Issues of <i>Reflector Magazine</i>	https://www.astroleague.org/reflector/april-2022-reflector-magazine
CFAS ALCor	Hank Lyon, hlyon8448@gmail.com
Additional AL News, Information and Reminders	<p>CFAS has submitted a vote to the AstroLeague accepting all proposed changes to the AL bylaws. Thanks for your feedback!</p> <p>Happy with your <i>Reflector</i> magazine delivery preferences (digital or snail mail)? If not, please let your ALCor know your preference.</p>

The AstroLeague Correspondent (or ALCor) is your link between CFAS and the AstroLeague. Don't hesitate to contact your ALCor if you need assistance with anything AstroLeague related whether its general information or detailed coordination of observing program completions for certification. **Check back each month to see any new links, postings or reminders.**

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CFAS Correspondence:

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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: Ben Steelman
 Vice-Pres: Brendan O'Byrne
 Associate VP: Jon Stewart-Taylor
 Secretary: George Pappayliou
 Treasurer: Bill Cooper
 ALCor: Hank Lyon

Dues: Dues for 2023 are \$25 for Individual and \$32 for Family Membership. Students dues are \$5 per year.

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Contact Us:

You can contact CFAS at info@capefearastro.org
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