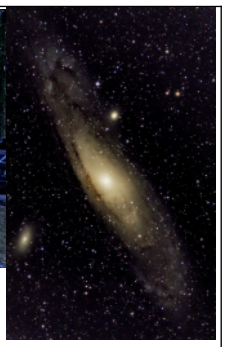






CAPE FEAR Skies

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

March 2026

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

President's Message

by Karl Adlon

Good News!!

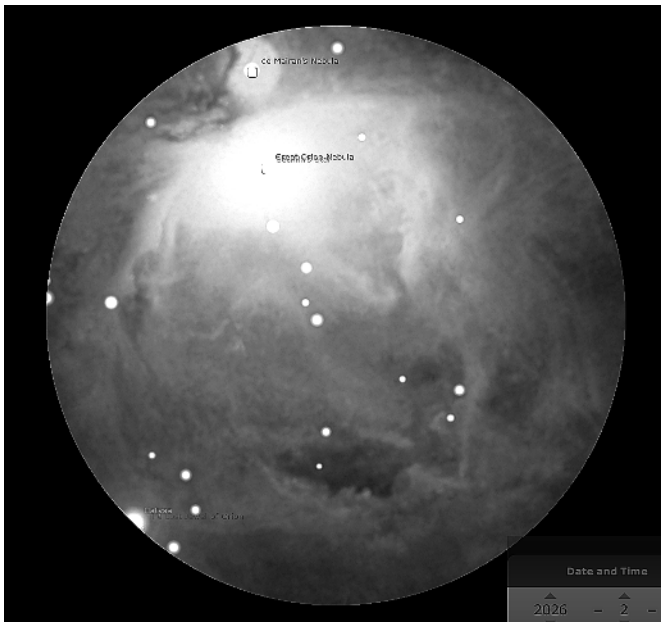
Damain Smith has agreed to be Vice President and Outreach Coordinator and Ben Steelman has agreed to be our ALCor (Astronomical League Correspondent).

Please join me in thanking them in accepting these positions and duties!!

★ ★ ★ ★ ★

I'm thinking that March Madness is a result of too few nights of decent observing weather. That's how it's been in February and I'm hoping it changes. I'm also hoping more members and their guests get out to Starfields. I think you would be super impressed to view the Orion Nebula through the Celestron C11. If you like numbers: with the 2" 32mm eyepiece the scope yields a power of ~88X, an exit pupil of ~3.2mm and a true field of view of ~0.8°. But the numbers, while interesting, don't tell the story of the view – how bright and contrasty the nebula appears and amount of whispiness visible in the eyepiece. You have to see it and experience it. As they say, "pictures don't do it justice" and "you have to see it to believe it".

From Stellarium



The next-to-last page of this newsletter is about the March 3 Total Lunar Eclipse. Note that the times are CST, so add an hour for EST. Find a clear horizon to the west. A little before 5 AM you should see some darkening of the limb towards the east. About 15 minutes later with the Moon about 17° above the horizon, notice that the Earth's shadow is quite different from the waxing Moon's terminator. Totality begins with the Moon about 7° above the horizon. The weather forecast, however . . . March Madness again?

"For my part, I know nothing with any certainty, but the sight of the stars makes me want to dream." *— Vincent van Gogh*

Upcoming Calendar of Events

March

03 Full Moon

03 Total Lunar Eclipse (sets mid-eclipse)

04 8 PM - Zoom the CFAS Special Interest Group

07 Venus-Saturn-Neptune within a 1.5 circle; 15 deg from sun; evening

Sunday, March 8

Gastronomy - 5 PM - McAlister's Deli

740 College Rd

Cape Fear Astro Monthly Meeting - 7:00pm – 9:00pm

Room 113 - DeLoach Hall; UNCW

Program: Frank Rich will show a video on the astro imaging software Siril, and discuss practical considerations of using it.

Also simulcast via Zoom

2026 Monthly Meeting Dates

March 8th in **Room 113**
April 12th
May 3rd (moved due to Mother's Day)
June 14th
July 12th
August 9th
September 13th
October 11th
November 8th
December 13th

09 Spring forward - Daylight savings time begins

11 Last Quarter Moon

13 Club Observing @ Starfields - 7:00 PM

14 Club Observing @ Starfields - 7:00 PM

16 SRSP - Staunton River (Spring) Star Party - Staunton River State Park VA

17 Saint Patrick's Day 

19 New Moon

20 March Equinox (Northern Spring)

20 Club Observing @ Starfields - 7:00 PM

21 Club Observing @ Starfields - 7:00 PM

25 First Quarter Moon

28 Public Observing - 7:00 PM to 09:00 PM - Carolina Beach State Park

Quasars and the Global Positioning System

by Karl Adlon

A long, long time ago I read that the GPS system used quasars to know exactly where the satellites were – a necessity for receivers to know their precise location on Earth. For me, that wasn't enough. I wanted to more about HOW they used quasars. So I asked ChatGPT and this was the answer, though edited to turn it into an article.

Quasars are extremely distant (billions of light-years away), very compact radio sources - so far away that they have no detectable proper motion. From Earth, they are effectively perfectly fixed points in the sky. Nothing in our solar system comes close to that stability. Because of this, quasars define the International Celestial Reference Frame (ICRF)—the ultimate "cosmic coordinate system."

Quasars are observed using VLBI (Very Long Baseline Interferometry). Radio telescopes spread across Earth observe the same quasar simultaneously. The quasar's radio signal arrives at each telescope at slightly different times. These time delays are measured to picosecond precision. From those delays, scientists can determine:

- Earth's rotation rate
- Polar motion (wobble of Earth's rotation axis)
- UT1 (true Earth rotation time vs atomic time)
- Exact positions of the telescopes relative to Earth's center

Without using quasars, Earth's orientation would drift, and GPS accuracy would quietly degrade.

Thanks to quasar-based VLBI:

Earth orientation is known to ~0.1 milliarcseconds
That corresponds to millimeters at Earth's surface
GPS satellite orbits are known to 1–2 cm

That's why your phone can locate you within a few feet—and why geodesy, tectonic plate motion, and spacecraft navigation all work.

Calling New Astronomers!

by Jon Stewart-Taylor

If you consider yourself a new or beginner astronomer, please consider becoming active in the New Astronomer SIG (Special Interest Group). This will be separate from the "generic" SIG we've had for the last year or two, in that it will be explicitly to address what new astronomers want to learn.

This can include learning the constellations, binocular astronomy, telescope selection and usage, observing programs, and more. In addition to the on-line via Zoom meetings, I'd like to hold at least one event per month in-person at night. This could be at the club observatory at Starfields, or someplace closer to people in the Wilmington or Brunswick areas.

- ★ Please send email to me at stewarttaylorj@gmail.com with your preferences for:
- ★ Day of the week and time of day for the Zoom meetings
- ★ Preferred area for in-person at-night meetings
- ★ Topics you'd like to see addressed.

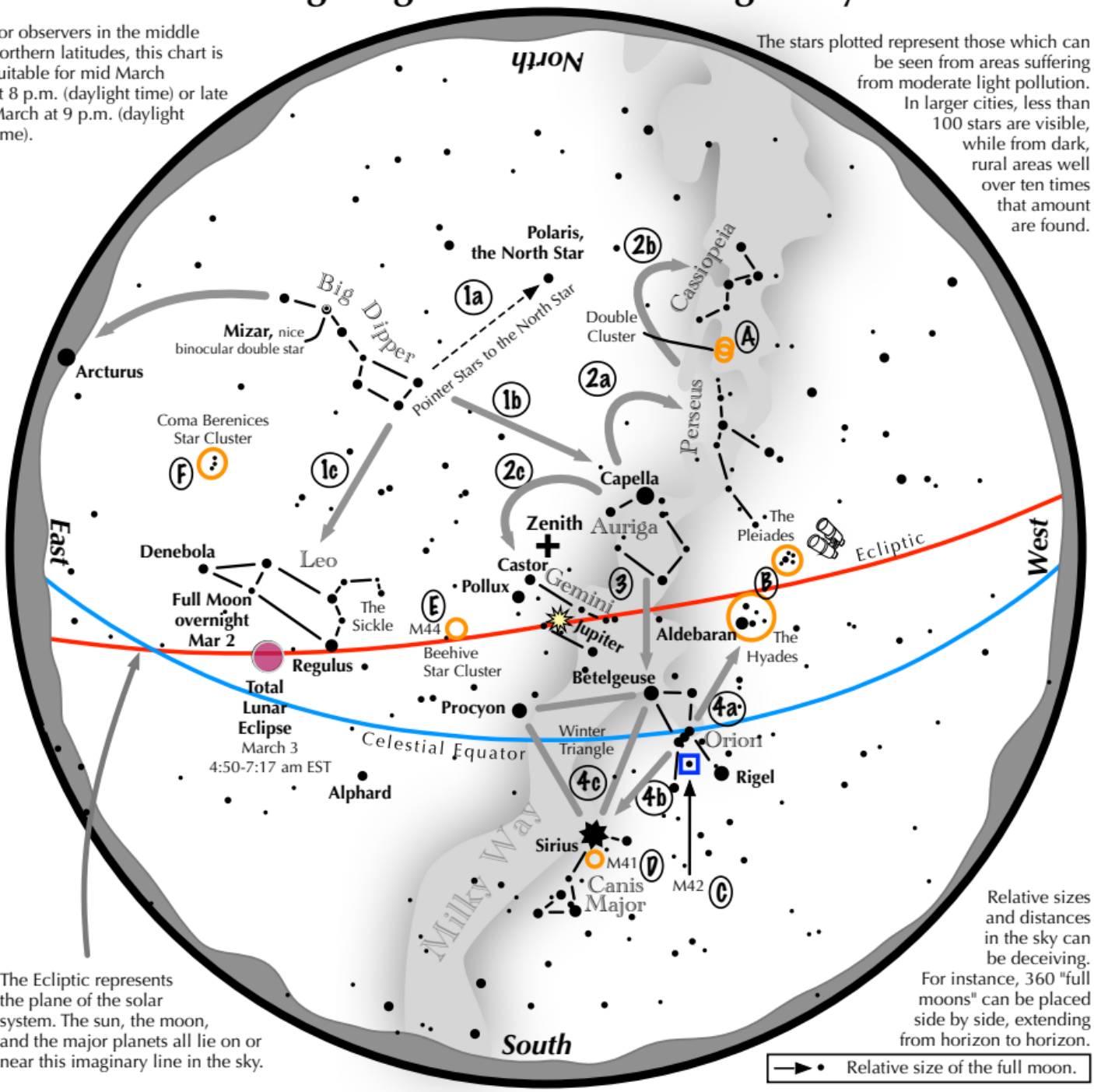
I'd also like to discuss this new SIG at the March monthly meeting.

I'm hoping to hold the first Zoom meeting sometime in March, and hold an in-person meeting in April.

Navigating the mid March Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 p.m. (daylight time).

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→• Relative size of the full moon.

Navigating the March night sky: Simply start with what you know or with what you can easily find.

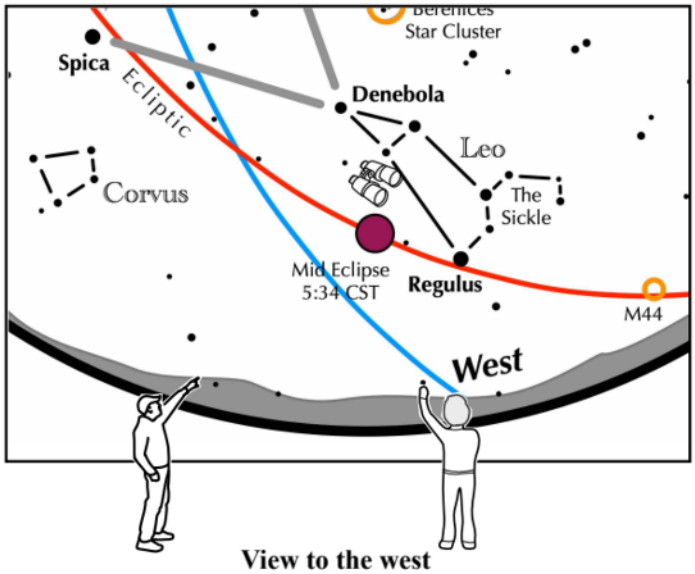
1. Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
2. From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
3. Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
4. Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

Binocular Highlights

A: Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.

Astronomical League *www.astroleague.org; duplication is allowed and encouraged for all free distribution.*

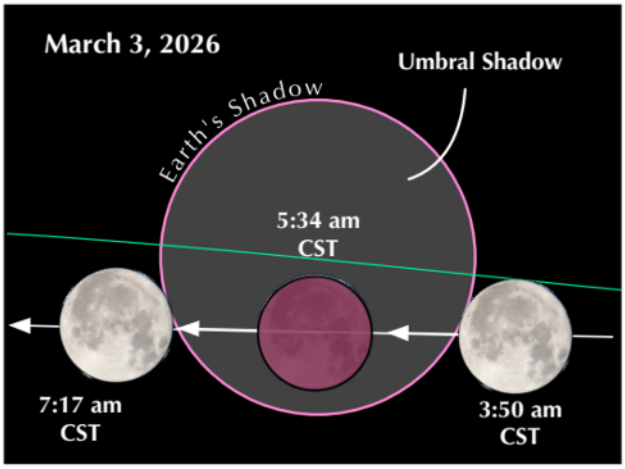
If you can observe only one celestial event in the morning this March, see this one.



View to the west on March 3 at 5 am CST

Eclipse times

Partial eclipse begins: 3:50 a.m. CST
Total eclipse begins: 5:04
Mid eclipse: 5:34
Total eclipse ends: 6:03
Partial eclipse ends: 7:17



The Moon slides through a total eclipse

In the hours before dawn on March 3, the brilliant full moon slides into Earth's shadow.

- Even though the partial umbral eclipse begins at 3:50 a.m. CDT, darkening might not be noticed for another 5 minutes.
- When totality is reached, the full moon's brilliance is gone, allowing the stars to appear. Can you see that the moon lies east of Regulus and below Leo?
- At mid eclipse, what color is the moon? How red is it?
- During the partial phases, can you notice that the shadow's edge is not straight, but curved?

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 AL links below to see how the Astroleague can support your astronomical interests and endeavors.

Astroleague Home Page	www.astroleague.org
Astroleague YouTube Channel	https://www.youtube.com/channel/...
AL Observing Programs *(Alphabetical Listing)*	https://www.astroleague.org/alphabeticobserving/
Night Sky Tools	https://www.astroleague.org/navigating-the-night-sky-guides/
Remembering Al Nagler	https://www.astroleague.org/wp-content/uploads/2025/10/Nagler.pdf
Current and Past Issues of *Reflector Magazine*	https://www.astroleague.org/reflector/

AL Related News, Information and Reminders

Information: Click HERE for the Astroleague News Page and be sure to check the Astroleague Home Page weekly for new and important posts.

REMINDER - Beware of Fraudulent Emails appearing to originate from the AL. Click HERE for more information.

Contact the CFAS ALCOR for any changes to your Reflector delivery preferences (US Mail, Email or Both).

CFAS Correspondence:
Please contact the society at: CFAS, P.O. Box 7685, Wilmington, NC 28406

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

CFAS Officers:

President:	Karl Adlon
Vice-Pres:	Damain Smith
Associate VP	Alan Hilburn
Secretary:	Jon Stewart-Taylor
Treasurer:	Ben Steelman
ALCor	Ben Steelman

Dues: Dues for 2026 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
Or you can pay electronically by following this link: https://www.capefearastro.org/payment.htm

Contact Us:
You can contact CFAS at info@capefearastro.org
Our website is http://www.capefearastro.org/