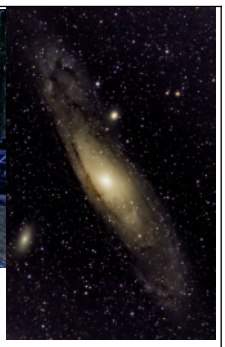






CAPE FEAR Skies

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

December 2025

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

CFAS Annual Holiday Celebration

by Karl Adlon

*

Time: 4 PM

Date: Sunday, December 14

Location: Mary Jean & Karl Adlon's

2829 Pine Forest Drive, Southport, NC 28461

We live in St James. The entry gate knows about the party. Tell security you are coming for the Astronomy Club party at 2829 Pine Forest Drive. Details: We will supply dinnerware, drinks and something to eat. Please bring something to share and, if you have something specific you want to eat or drink, bring that too. PLEASE Email: kmja79@yahoo.com what you will bring to share and number of guests. I don't think we want everyone bringing salads!

Cell: 309-230-6429
or text or for questions

Upcoming Calendar of Events

DECEMBER

04 Full Moon
11 Last Quarter Moon
12 Club Observing @ Club Observatory – 5:00 PM
13 Club Observing @ Club Observatory – 5:00 PM
14 Geminiid Meteor Shower; ZHR 150; 2 days after third quarter moon
14 Cape Fear Astro Holiday Celebration (members & guests only)
Hosted by Mary Jean & Karl
See details above.
19 Club Observing @ Club Observatory – 5:00 PM
20 Club Observing @ Club Observatory – 5:00 PM
20 New Moon
21 December Solstice. Northern hemisphere winter. 15 UTC
22 Ursid Meteor Shower; ZHR 10; 2 days after new moon
27 First Quarter Moon

Presentation Coordinator's Report

by Jon Stewart-Taylor

The end of the year is on us, and we have only the December meeting before the new year. As always, the December meeting is the Holiday Celebration.

At this time we have no presentations scheduled for 2026. If you would like to make a presentation, or know someone who would be willing to make such a presentation, please contact me via e-mail or phone as listed in the club roster.

Thank you!

Library Update: The Caldwell Objects

by Jon Stewart-Taylor

We have received a book from Ronnie Hawse's estate which may interest you. *The Caldwell Objects* written by Stephen James O'Meara (part of the "Deep Sky Companions" series) goes into considerable depth about the so-called "Caldwell catalog" created by Astronomy popularizer Patrick (Caldwell-)Moore.

If you're not familiar with the Caldwell list (as I prefer to call it), it contains 109 deep-sky objects as a sort of "after the Messier catalog" target list. It contains mostly NGC objects, with some Index Catalog (IC) and other less well-known catalogs.

One thing which makes this list different from others is that the objects are numbered based on their declination, rather than right ascension, This means that sequential numbered objects may be quite far away from each other.

The other notable difference is that the objects are selected from both northern and southern objects, so observers cannot "catch 'em all" without actual travel to the opposite hemisphere (unless you live on the equator). The Astronomical League's observing program for

the Caldwell objects includes all 109 regardless of hemisphere, but only 70 total objects need to be observed. You get to choose which 70 based on what you can actually observe from where you live.

When I say the book goes into considerable detail, consider that for a list of 109 objects, the book contains over 400 pages. Each object has an entry which usually contains a photographic image, a drawing as observed through a 'scope, a finder chart, and text describing the history, appearance, scientific information, and finding instructions.

The book contains a 5-page appendix with one-liner entries for each object listing the location, magnitude, and size.

You can find more information about the book at the Club Library catalog

Lifted Up Where It Belongs

by Hank Lyons and Jon Stewart-Taylor

Hank: The pier at the observatory has been raised several inches to make visual observing more comfortable when using the C11. A before and after picture is shown to illustrate the change. Anyone interested in getting checked out on the C11/Atlas please make an email post so you can be contacted by someone on the observatory committee.

Note the increased pedestal height >>>>>>>>

Jon: In the past, the Atlas mount in the POD at the observatory was low enough that using any of our Schmidt-Cassegrain scopes (C11, Meade 10, or C8) gave most observers neck strain when looking much above 45º above the horizon.

After some discussion, Hank Lyon took charge of a project to improve that. He added a new 8" block plus a smidge of extra height, extended the electrical connections, and remounted the Atlas more securely on the pier.

His changes, combined with the "drummer's throne" style adjustable chair make it much more practical to use the scopes.

Would anyone be interested in a monthly observing session using this setup for lunar and planetary observing during first quarter or full moon weekends?

Karl: YES! We can start before full dark and at least one member (me) wants to attach a camera and take a video.

“Red” and Andromeda

by Karl Adlon

While my astrophotography rig was imaging the Andromeda Galaxy (more about that later) I started observing Saturn with a new, used red tube XT8. Although I didn’t need another telescope, I was told it was barely used (true) and it *was* a good price. I started at low power – about 35X. It’s 1200 mm focal length and using a 2X barlow and 8 mm eyepiece gave 300X. The edge-on rings were nice and sharp, as was the ring shadow on the planet. Then I noticed that the view degraded periodically, something like for less than a second in 4 second intervals. I’m guessing the tube was gulping cooler air and expelling warmed air – tube currents. I tried a 5X barlow with a 14mm eyepiece (429X) and I think it would have been good if not for the tube currents. That’s a Wow! in my book. I’m going to have to experiment with a fan behind the mirror.

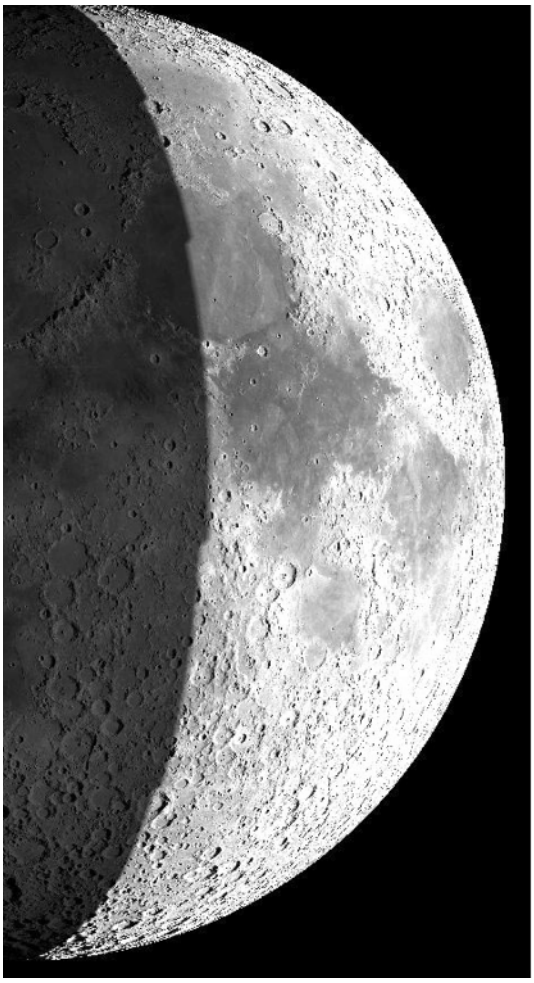
I also observed the Andromeda Galaxy and the Pleiades at a little less than 40X. They looked good but skies were not as dark as some nights, so it was more look than observe.

Raw! Raw! Raw!

I’m not rooting for a football team; I’m telling myself raw, not jpg format images. I’ve taken pictures of M31 that had nice color, but AI says shooting astrophotos in jpg can cause a loss of color as can les than very dark skies.

The stacks turned out rather bland and neither Deep Sky Stacker’s post stacking not Photoshop Elements’ processing would make the resulting acceptable.

Then I remembered having used GraXpert to remove light glare from a streetlight in an image of the Rosette Nebula, so I tried it. Yay! (Not a football cheer.) It gave **much** better results.



Something About the Moon

by Karl Adlon

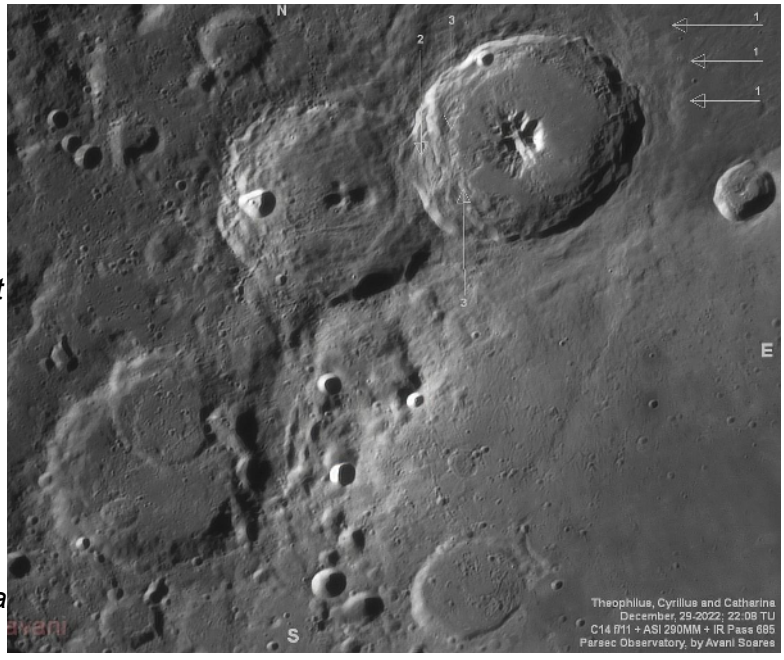
December 25th, 2025: For anyone who received a new telescope today (and you who already have a telescope), take a look at the 5.5 day old Moon.

I see three craters in an arc just below center and a bit off the terminator. They are, from top right, Theophilus, named for a 4th century Greek Philosopher, Cyrillus, named for Saint Cyrille, a 5th century Greek Philosopher, and Cathrina, named for Saint Catherine of Alexandria.

From https://skyandtelescope.org/online-gallery/theophilus-cyrillus-and-catharina/ :

When I see Theophilus, Cyrillus and Catharina well positioned in relation to the terminator, I can't help but shoot a few frames.

Theophilus is a spectacular formation with all the complexities inherent in a Tycho-class crater: terraced walls, flat floor and magnificent central mountain peaks. It is 96 km in diameter, and the drop of the highest mountains from the rim to the floor below is 4.3 km, imagine an observer on top of the mountain looking down on the floor below, it must be breathtaking! Observers have reported that the shape of the central mountain appears to change as the lunation progresses, it must be due to shadow play, even so, keep an eye out for Theophilus in upcoming lunations and see if you agree. Notice how Theophilus's floor is much smoother than Cirillus's and Catharina's. When the impact that produced Theophilus occurred, much of the excavated material shot upwards. When it came back (in the form of molten rocks and boulders the size of mountains), it oozed down the smooth floor in the form of lava. There is also impact melt around the outside of the crater (arrow 1) that can easily be seen with backyard telescopes. Take advantage of this, as there aren't many places on the Moon where you can see such a thing. Most of this impact melt occurs northeast of the crater and flows into Sinus Asperitatis. Lunar scientist Charles Wood points out that this is because the south rim is higher. Shortly after the impact, the terraces located to the southwest (arrow 3) collapsed into the lake of molten lava below, see the triangular block that slipped downwards similar to the one found in the Plato crater (arrow 2) . Do not forget that these terraces were more than 4 km high, imagine this colossal amount of rubble falling on the molten lava, this formed gigantic waves of hot lava rushing towards the opposite side. As the north rim is lower, these waves crashed against the wall, rose its edges, overflowed to the outside of the crater and accumulated to the northeast as can very well be seen and indicated by arrows 1.



Why does this area attract so much interest from observers? Perhaps because it includes the second best visible crater on the Moon (after Copernicus). This means that the entire interior of Teophilus crater is clearly visible, with its wide flat floor and huge central mountains.

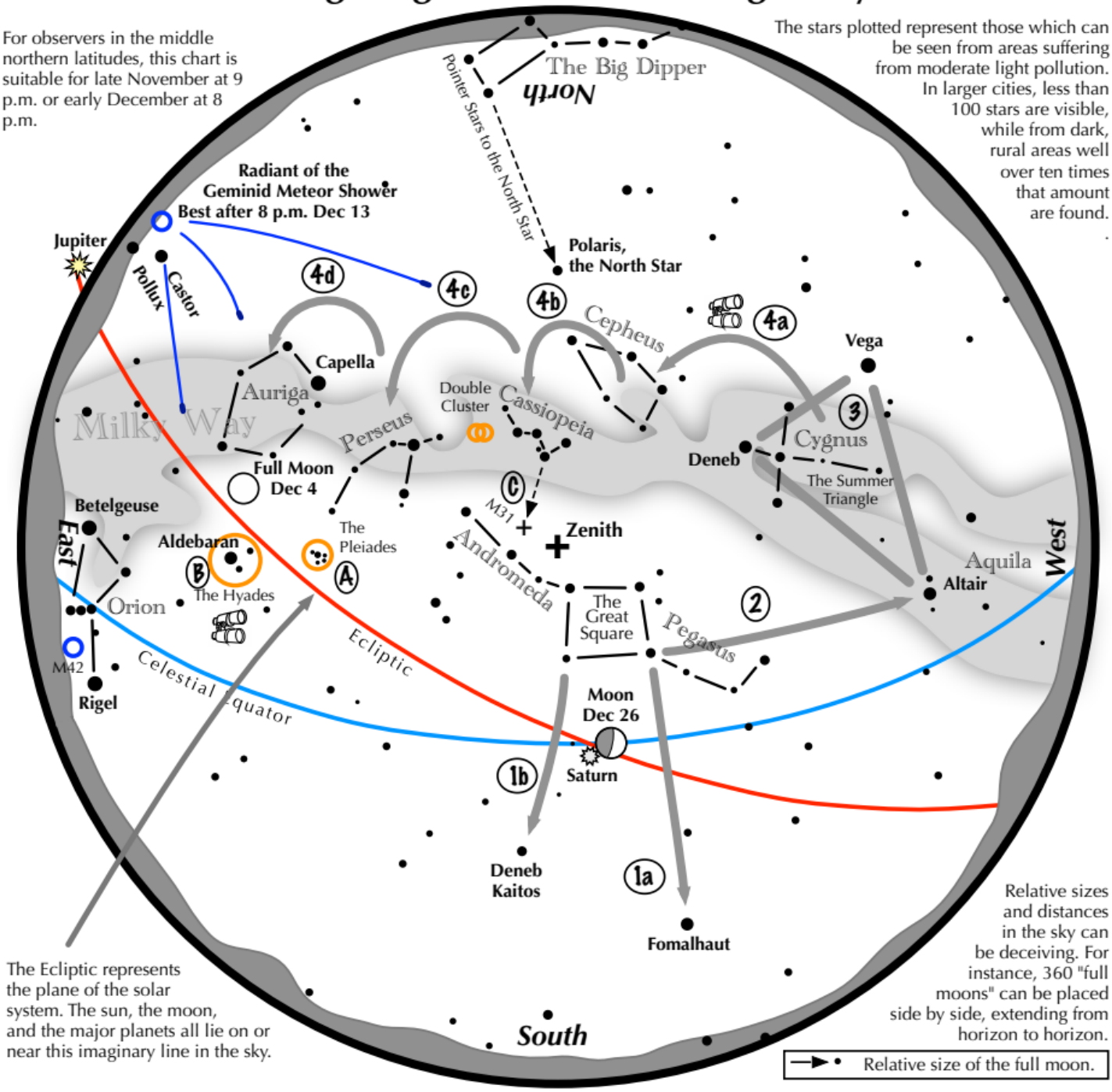
The second reason that makes this area one of the favorite targets is that there are three craters there, Teophilus, Cyrilus and Catarina. These three craters are approximately 100 kilometers in diameter and illustrate different stages of degradation. Cyrilus crater is older than Theophilus crater as it is noted that its rim was modified by the impact that formed Theophilus. Catharina crater is certainly the oldest of the 3, both because it is more worn out and because it has been modified by several later impact craters, and a large crater can even be seen on its northern edge, in addition to being much shallower than the others. which means it was probably filled with ejecta from the Imbrium Basin. Perhaps there are additional reasons to make this a privileged spot for observation, a sea, a flooded basin cut by mountain ranges and 3 magnificent craters. When you observe a lunar region and are aware of all these factors, you will certainly see the Moon with different eyes! Text and adaptation: Avani Soares

Navigating the December Night Sky

2025

For observers in the middle northern latitudes, this chart is suitable for late November at 9 p.m. or early December at 8 p.m.

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 December night sky: Simply start with what you know or with what you can easily find.

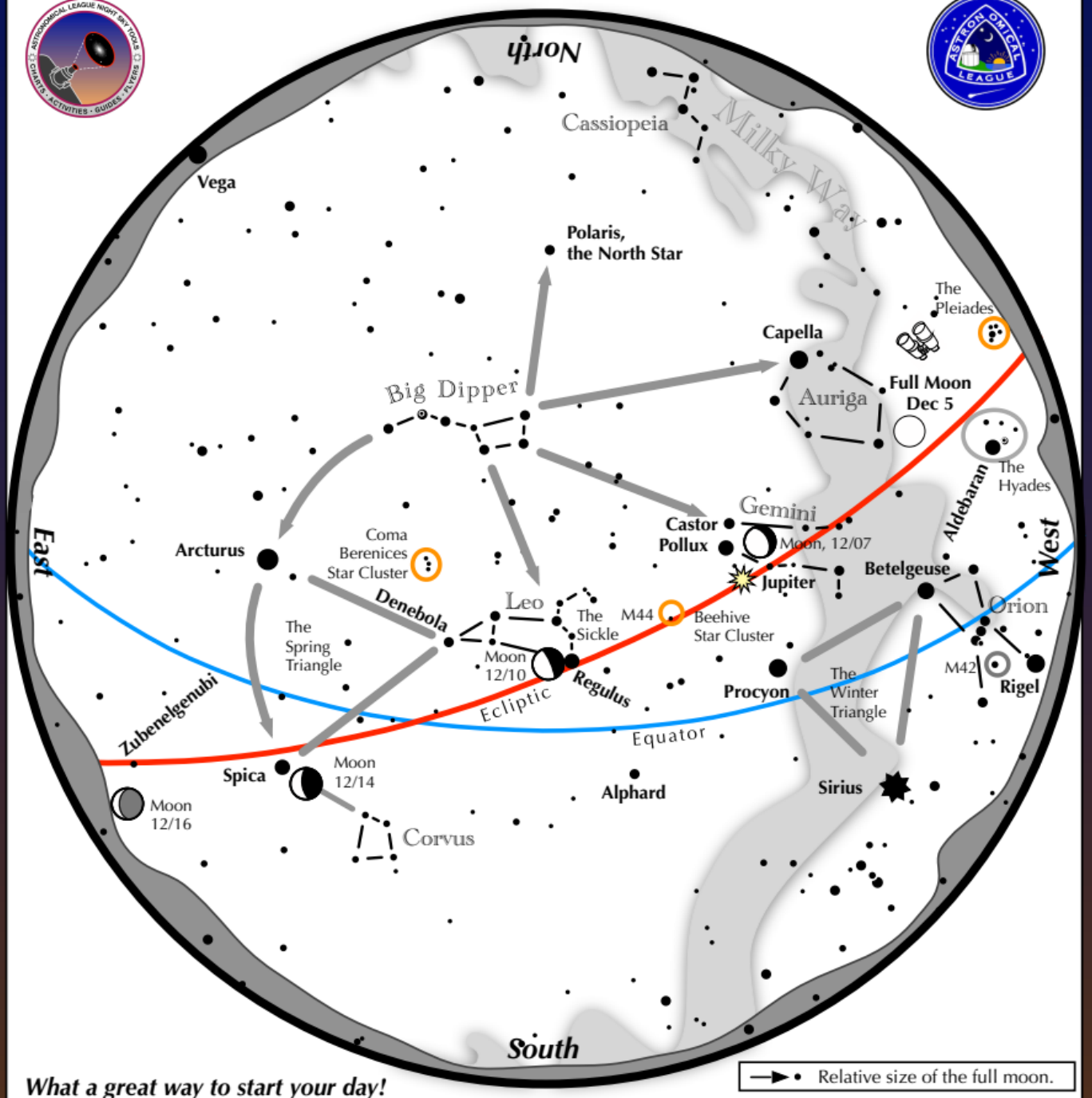
1. Face south. Almost overhead is the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend an imaginary line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the southwest. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second bright star in the south.
2. Draw another line, this time westward following the southern edge of the Square. It strikes Altair, part of the "Summer Triangle."
3. Locate Vega and Deneb, the other two stars of the "Summer Triangle. Vega is its brightest member while Deneb sits in the middle of the Milky Way.
4. Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas.

Navigating the December Morning Sky

2025



Relative size of the full moon.

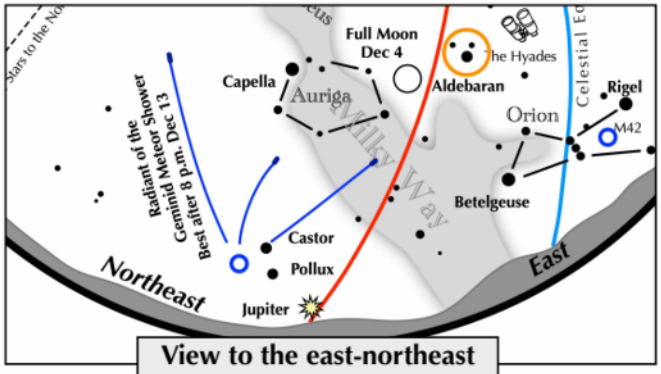
What a great way to start your day!

For observers in the middle northern latitudes, this chart is suitable for mid December at 5:00 a.m.

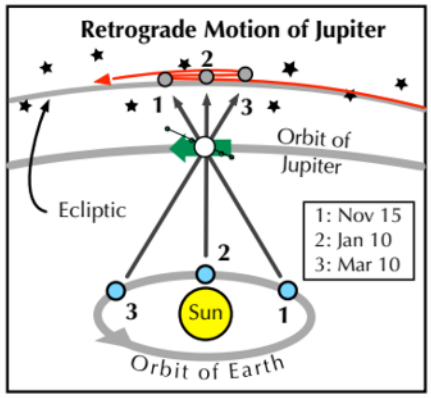
Late sunrises in December provide opportunities for early morning skywatching.

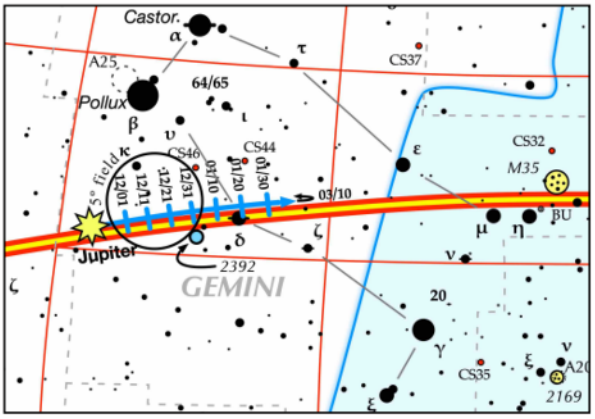
- Bright Jupiter shines high in the west.
- The near third quarter moon floats above Regulus on December 10.
- The waning crescent moon glows next to Spica on December 14.
- The thin crescent moon rises near the double star Zubenelgenubi on December 16.
- A great time for viewing the Big Dipper, Leo, and the Spring Triangle. And, in the second half of the month, it is time for galaxy viewing!

On evenings in December (and January), try this challenge:



View to the east-northeast in early December at 10 pm





Jupiter moves in retrograde

On evenings in December, the Giant Planet slides westward in central Gemini to the lower right of Castor and Pollux.

Observe, then plot its motion in the heavens. It continues its westward journey in January, but begins to slow in February. On about March 11, it halts and reverses direction.

The passing bright moon will hamper observations on December 4-8.

Why do this activity? This planetary dance can only be explained if both Earth and Jupiter orbit our sun following definable and slightly elliptical paths. Our view from Earth clearly shows this to those people who take the time to look carefully enough.

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/
Astroleague Store	https://store.astroleague.org/
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.

Keep in mind there are great gift opportunities at the Astroleague Store!

Contact Hank Lyon, hlyon8448@gmail.com, 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:	Ben Steelman
Vice-Pres:	Jon Stewart-Taylor
Associate VP	Karl Adlon
Secretary:	George Pappayliou
Treasurer:	Bill Cooper
ALCor	Hank Lyon

Dues: Dues for 2025 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:
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