



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

CAPE FEAR *Skies*

January 2025

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

President's Message

by Ben Steelman

Happy New Year!!

Only five members turned out for the CFAS semi-official Christmas Party. (Maybe we should rethink the event.) That's not a quorum, so we'll have to elect officers at the next regular meeting on January 12.

As a reminder, the candidates are:

For president: Ben Steelman

For vice president: Jon Stewart-Taylor

For associate vice president: Karl Adlon

For secretary: George Pappayliou

For treasurer: Bill Cooper

A couple of other items of business:

1. We still need some new volunteers for the Observatory Committee. With so much work done, and the dome in place, this should not be grueling.

2. We still need to find a permanent home for the Society library and a better way for members to check out books.

3. Super Bowl LIX (or 59 if you're not into Roman numerals) will be Feb. 9, so we will have to reschedule our February meeting -- to Groundhog Day, perhaps.

Also, 2025 dues are now due. Remember regular dues are \$25 per year for individuals, \$32 for couples and \$5 for students. You can pay at the regular meeting or mail a check to Cape Fear Astronomical Society, P.O. Box 7685, Wilmington, NC 28406. Or you can pay electronically by following this link: <https://www.capefearastro.org/payment.htm>

Keep Looking Up!

Calendar

The full club calendar is available at <https://www.capefearastro.org/calendar.htm>

Sunday, January 12

★ Cape Fear Astro Monthly Meeting ★

GAstronomy Meeting - 5 PM

(Dinner, prior to the Monthly Meeting)

McAlister's Deli

740 South College Road

Wilmington, NC 28403

CFAS Monthly Meeting

7:00pm – 9:00pm - 212 DeLoach Hall; UNCW

Also simulcast via Zoom

Some Astronomical Events in January

by Jon Stewart-Taylor

03 January: Peak of Quadrantid Meteor Shower

The Quadrantids have a very narrow peak, about 6 hours. The moon will be waxing crescent, and will set around 9 pm. The radiant is in Bootes, and rises high enough to start observing at about 1:30 in the morning. The meteors should continue until sunrise, and probably will be most numerous an hour or so before dawn. You should see about one a minute at the peak, though they decrease quickly afterwards. The current forecast for Friday the 3rd is for mostly clear skies that night and sunny on Saturday, so we'll open the observatory at around sunset. People can come whenever they wish, use telescopes or binoculars until it's time for the meteors. You sleep in as long as they care to on Saturday.

13 January: Lunar Occultation of Mars

The moon will cover the planet **Mars**, beginning around 9:15, and end around 10:20. The moon will be full, and risen to about 45° altitude at the time of start, so it should be pretty easy to spot. **Mars** will be only two days from opposition, and will be about as large and bright as it will get this year. Should be good to observe with eyes, binoculars, and/or telescopes.

17 - 18 January: Venus and Saturn close approach

The two planets will pass one another in the sky. Unfortunately, the closest approach will be after the two set for us. At about 8 pm, the two planets will be about 4° apart at 15° altitude. When they set at about 9 pm, they'll be about 2.5° apart, but almost certainly not viewable from here on the east coast of the US. At sunset the next day, they'll again be about 2.5°. If the weather is good, they'll make a fine unaided-eye and binocular target from sunset until they set.

Bad Mars

by Karl Adlon

The chart at right explains it all.

This opposition of **Mars**, the planet is nicely placed at a high elevation of $+25.1^\circ$, however, **Mars** is further away at 0.6435 AU.

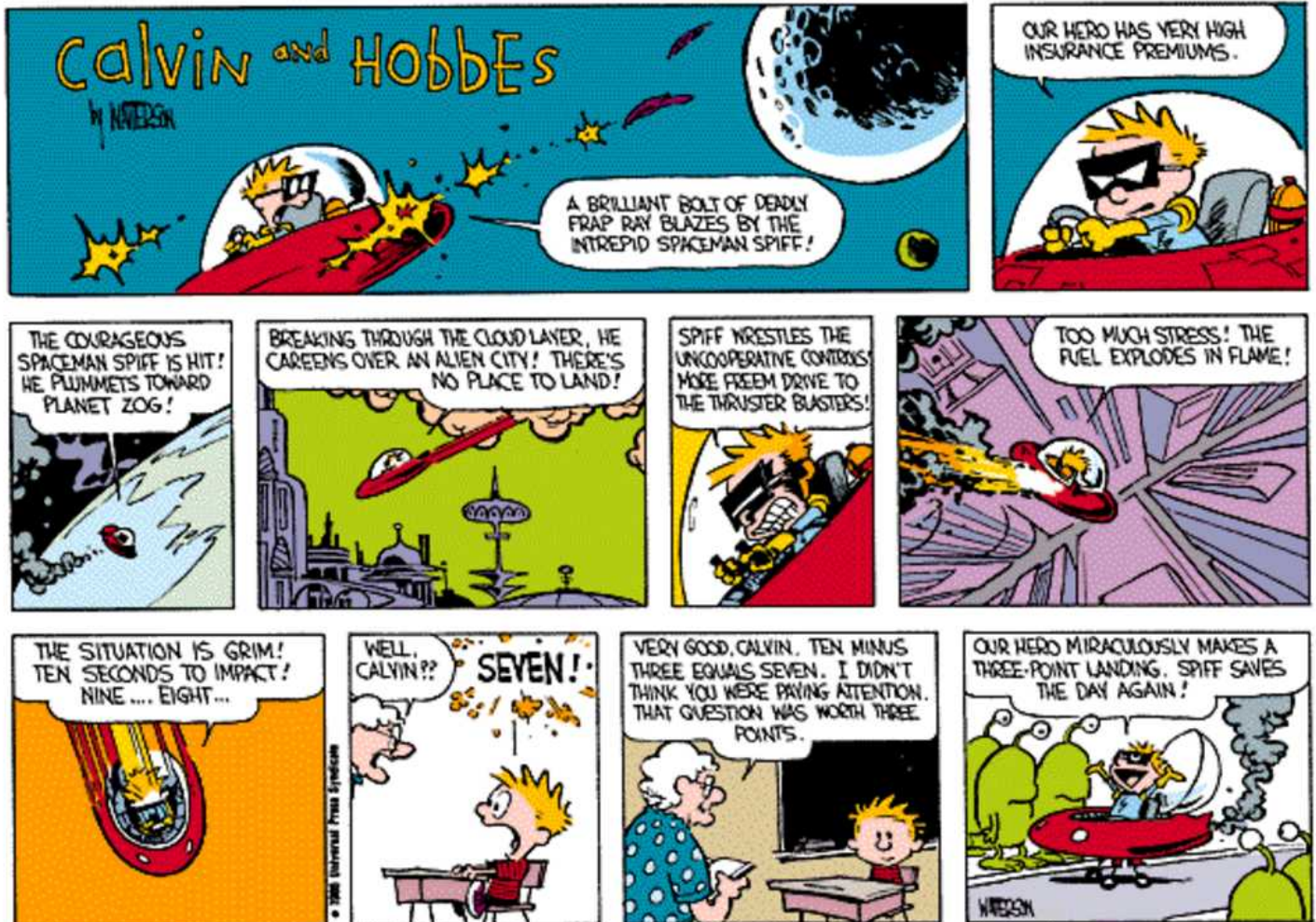
When **Mars** is closer, like 2018 when it was only 60% as far away, it's also lower for us northern hemisphere observes at -25.4° and we need to look through more atmosphere.

Obtaining a good image or view of **Mars** can be very frustrating for us. Might as well hide **Mars** behind the Moon!

Opposition Date	Constellation	Declination	Apparent Magnitude	Apparent Diameter (arcsecs)	View from Earth (North up)	% of Max. Size	Distance (AU)*	
							from Earth	from Sun
2012 March 3	♌	Leo	$+10^\circ.2$	-1.2	13".9	54	0.6745	1.6646
2014 April 8	♍	Vir	$-5^\circ.1$	-1.5	15".1	58	0.6219	1.6226
2016 May 22	♎	Sco	$-21^\circ.6$	-2.0	18".4	71	0.5101	1.5224
2018 July 27	♏	Cap	$-25^\circ.4$	-2.8	24".2	94	0.3862	1.4000
2020 October 13	♏	Psc	$+5^\circ.5$	-2.6	22".4	87	0.4181	1.4154
2022 December 8	♉	Tau	$+24^\circ.9$	-1.8	17".0	66	0.5492	1.5340
2025 January 16	♊	Gem	$+25^\circ.1$	-1.4	14".5	56	0.6435	1.6261
2027 February 19	♌	Leo	$+15^\circ.2$	-1.2	13".8	54	0.6780	1.6651

AL Facebook Page:

<https://www.facebook.com/search/top?q=astronomical%20league>



My UFO Experience

by Roger Blake, 12/26/24

Many years ago, I had my first and only UFO experience (so far). It wasn't very spectacular and I didn't realize it's significance to me until years later.

I was in my first year of college in Miami, FL. It was early on a warm summer evening and I was listening to music on the radio. We had TV but only three channels so I didn't use it much. After one of the songs, an announcement was made that there were reports of UFOs spotted in the Miami area.

I heard it but didn't believe that it was serious, maybe a joke, maybe a hoax. But the announcement continued, explaining that there were two types of UFO sightings being called in to the station. One was apparently between two tall buildings in downtown Miami and another circling the greater Miami area. In my mind I'm trying to decide what I should do. I was and am very interested in UFOs, but could this be real? I was 99 to 1% that it was a hoax of some sort but there was no way to get more info. The internet hadn't been invented yet so I had to go see for myself. The downtown report seemed like it was obvious enough that, if true, many people would see it and if true I'd see pictures the next day. My location was pretty far west of the city so I decided to drive a few miles farther west beyond any population to the edge of the everglades and see what I could see.

Two of us drove out to a dirt road far from city where the skies were reasonably dark. I expected to get eaten alive by mosquitoes, but there was a good breeze so we were spared. It was a very nice evening, warm but not hot. We stood outside the car and silently scanned the skies. The radio station had given no description so we didn't know what we were looking for. Minutes past but the skies seemed empty. But then I noticed something.

I wasn't sure it was anything of interest so I didn't say anything and just watched it for awhile. It was just a far away red light, low in the sky, no sound, but something about it had caught my eye. It was a mile south of us, maybe only 10° above the horizon. Initially it seemed stationary, but as I watched I could see it was moving very slowly eastward. I thought it might be an aircraft navigation light which made some sense because an eastbound aircraft would have its port side with the red light towards me and the starboard green light away so I wouldn't see it. But it wasn't flashing, it was very slowly pulsating! From its maximum brightness it gradually faded over a minute or so to almost dark, then just as slowly it gradually brightened over another minute or so to full brightness, and then repeated.

Finally I said to my friend "I think I see something" without taking my eyes off the object. He responded "Me too." We watched for at least 30 minutes. As I watched I thought about what I was seeing and asked myself if I was being objective, if I was seeing what I wanted to see. It was only a red light in the sky. Granted it was strange because it moved so slowly, and pulsated slowly, but that really wasn't hard evidence of a UFO. I turn to ask my friend what he thought and realized he wasn't looking in the same direction I was looking!

I was really shocked. "Where?" I asked. He pointed and I could see it. I told him that we were looking at two different objects. Mine was still south of us but his was northwest. It occurred to me that the angle between the two was roughly 120° which was 1/3 of a full circle rotation. I wondered if there might be a third one at another 120° which would make the arrangement symmetric. There was!

I acknowledged to myself that three symmetrically placed pulsating objects was way more interesting than just one, but still not hard evidence of a UFO. While I was thinking about what they could be I took my eyes off my object. Soon I heard "Mines moving!" I looked back at mine and saw it was also moving faster than the crawl we'd been watching. Its speed was now more like that of a normal distant aircraft. Their motion was still in a circular path around us. I kept my eyes on the one I'd been watching and was surprised a minute later to see it meet up with the two others at a point due east of us. What they did next was the hard evidence I was looking for.

The three objects came together and for a brief moment formed a stationary triangular formation. An instant later all I saw were three vertical red streaks. I didn't see them go up. I just had a fleeting afterimage of the streaks.

I didn't appreciate it then, but now I know the laws of physics so I know that maneuver is not possible for us. It wasn't just the speed. It was the instant acceleration which would have required infinite power delivered without a sound. Even if we had the power, that acceleration would create forces that would disintegrate anything we could build and reduce anything biological to blob of gooey protoplasm.

That's all we saw. We waited around for a while, but saw nothing else. I never heard anything more about the sightings after that night. I'm guessing that some saw them but didn't bother to report it, just like we didn't.


I'm very grateful to have had that experience because it helps to resolve a long standing concern of mine. It's undeniable that nature only has so many secrets, and I've often wondered about how close we are to learning all the important ones that might make interstellar travel possible. Consider our (mankind) history of fundamental science.

Most would say that the study of physics began with Aristotle almost 3000 years ago. He had the right idea but lacked the ability to make accurate measurements so little significant progress was made for the next 2000 years until the 1600's. In 1678 Newton published his laws of motion. This was followed by rapid series of discoveries in the 1700's and 1800's, followed by Einstein's Relativity in 1905, 1910 which said we couldn't reach light speed so interstellar travel was not possible. Since then there's not been much new for space travel during the last 100+ years, the light-speed limit is still firmly in place. The SpaceX rocket successes are advances in engineering, which is the application of physics we already know, not the discovery of new physics.

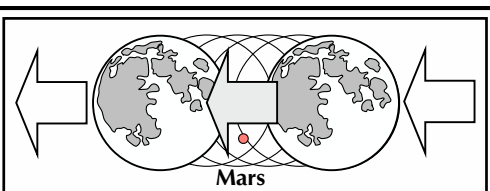
So, is that all there is? We'll never get to the stars?

My UFO experience suggests that we're not at the end yet, there's more to learn, so there's still hope we might yet find a way to exceed light-speed and get to the stars. There have been many other UFO reports that have suggested the same thing, but are any true? Now I know one that is.

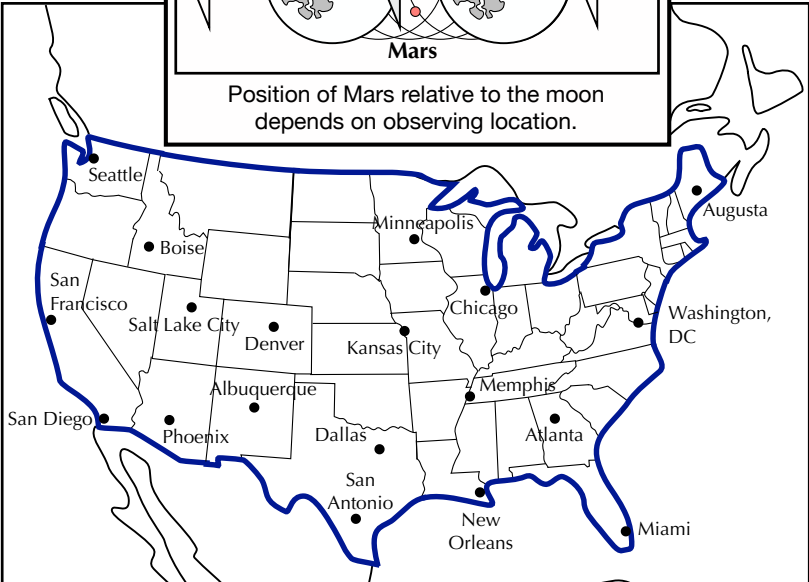
January 13 - Moon Occults Mars



If you can see only one celestial event this January, see this one.



Position of Mars relative to the moon depends on observing location.




Full Moon occults Bright Mars

In the evening hours of **January 13**, the brilliant full moon passes in front of bright Mars, which is near opposition. It may not be easy to spot because of the moon's bright glare!, but give it a try!

Approximate local times of disappearance and reappearance.


Begin viewing ten minutes before your estimated time. Mars' time and position of reappearance is difficult to judge since the planet lies concealed behind the moon beforehand.

City	Disappearance	Reappearance
Albuquerque	6:51 pm	7:52
Augusta	9:29	10:44
Atlanta	9:06	10:13
Boise	7:06	7:49
Boston	9:26	10:42
Chicago	8:08	9:16
Dallas	7:54	8:57
Denver	6:57	7:57
Kansas City	8:00	9:06
Memphis	8:00	9:07
Minneapolis	8:08	9:10
Los Angeles	5:51	6:45
Miami	9:30	9:53
New Orleans	8:00	8:59
New York	9:21	10:37
Phoenix	6:49	7:48
Salt Lake City	6:59	7:52
San Antonio	7:52	8:50
San Diego	5:49	6:45
San Francisco	5:58	6:45
Seattle	6:23	6:39
Washington DC	9:16	10:31



Be sure to use binoculars!

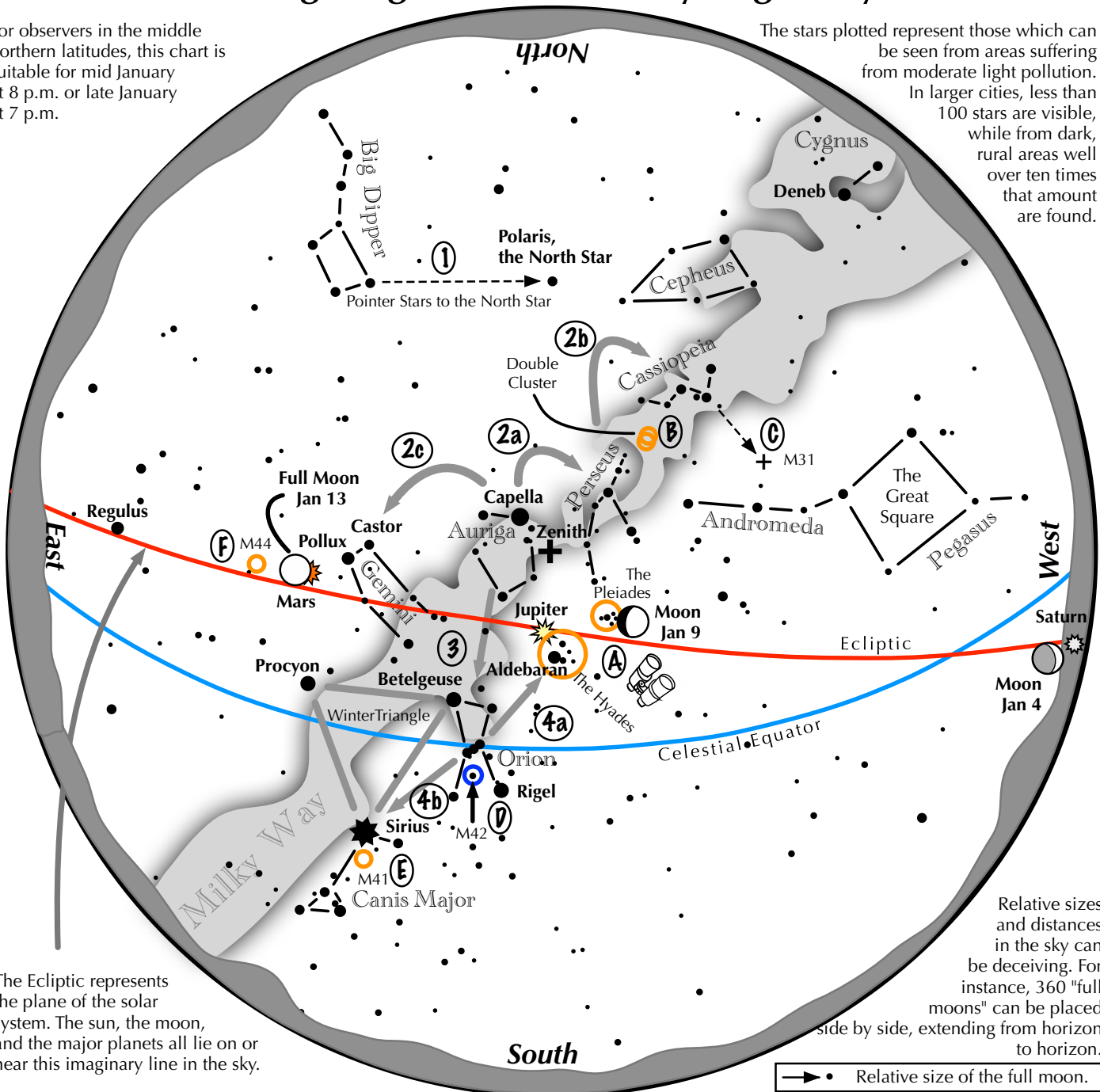
Occultations demonstrate the moon's eastward orbital motion as Earth's rotation causes it to move in a westward arc across the night sky.



Navigating the mid January Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid January at 8 p.m. or late January at 7 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 winter 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.
- 2 Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first to Perseus, then to the "W" of Cassiopeia. Next Jump southeastward from Capella to the twin stars Castor and Pollux of 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 to the red star Aldebaran, then to the Hyades, and the Pleiades star clusters. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius.

Binocular Highlights

A: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **B:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** M42 in Orion is a star forming nebula. **E:** Look south of Sirius for the star cluster M41. **F:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.



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
Astroleague YouTube Channel (NEW!)	https://www.youtube.com/channel/...
AL Observing Programs <i>(Alphabetical Listing)</i>	https://www.astroleague.org/alphabeticobserving/
Night Sky Tools	https://www.astroleague.org/navigating-the-night-sky-guides/
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Current and Past Issues of <i>Reflector Magazine</i>	https://www.astroleague.org/reflector/
Additional AL News, Information and Reminders	<p>Click HERE for the Astroleague News Page and be sure to check the Astroleague Home Page weekly for new and important posts.</p> <p>Contact Hank Lyon, hlyon8448@gmail.com, for any changes to your Reflector delivery preferences (US Mail, Email or Both).</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:

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: 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>

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