



President's Message

by Ben Steelman

I've been off the radar lately since I entered graduate school, hoping to get a master's in history. One of my courses tracks early American society, and one thing I figured out: There were a lot more amateur astronomers 200 years ago.

The two books most American households had in the late 1700s and early 1800s were a Bible and an almanac. Farmers and others closely followed the moon phases and other celestial events.

In part it was folklore; supposedly some crops should be planted by the dark of the moon, others while the moon is waxing. But much of it was practical; you can get a lot of work done outdoors around the time of the full moon/ That mattered when there was no electric power, when candles and lamp oil were expensive and when farmers generally had ready cash only around market time.

And once in a while, naked-eye astronomy changed history.

Consider the Great Leonid Meteor Storm of 1833. When the Leonid meteor shower approaches its peak in mid-November, observers can expect to see 10-15 meteors per hour. On the night of Nov. 12-13, 1833, however, people reported seeing as many as 100,000 meteors per hour over much of the USA east of the Rockies.

The spectacle shocked a lot of people; soon afterward, the Lakota nation reset its calendar. A century later, the old Guy Lombardo big-band standard, "Stars Fell on Alabama," was inspired by the incident.

Thousands of people were convinced the meteors were a sign of the Biblical End Times. Many of them turned to the teachings of William Miller, a Baptist lay preacher in upstate New York and re-read Bible passages to convince himself that the Second Coming was scheduled for 1843 or 1844, just a decade away.

Although Miller always fudged on predicting a specific day, a number of "Millerites" somehow convinced themselves that the Big Day would be Oct. 22, 1844. Some gave away their worldly goods; others donned white robes and climbed up on roofs to greet the Savior as He descended.

But Oct. 22 came and went, leading to the "Great Disappointment." Some Millerites joined the Shakers; others, including Miller, reformulating their beliefs and organizing what became known as the Adventist churches.

One note on the power of amateur stargazers and citizen science. The American astronomer Denison Olmstead began studying the phenomenon after the meteor storm. He discovered what many ordinary folks had known but had not occurred to Big Science: the meteor showers returned periodically. He attributed it to a cloud of particles in space, through which the Earth passes once a year; by the 1860s, astronomers were able to link it to Comet Tempel-Tuttle.

There hasn't been a Leonid storm since, although the meteor showers of 1866 and 1867 yielded up to 1,000 meteors per hour, and another spike was reported in 1966. Will we get lucky this year? Who knows?

Keep Looking Up!

Calendar

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

September 4

Monthly SIG (Special Interest Group) via Zoom

September 8

★ Cape Fear Astro Monthly Meeting ★

GAStronomy Meeting - 5 PM

Rosalie's Trattoria

5031 Market St, Wilmington, NC 28405

(Dinner, prior to the Monthly Meeting)

CFAS Monthly Meeting

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

Presentation: Starfields Update and POD Purchase

Also simulcast via Zoom

September 14

7 PM - 9 PM - International Observe the Moon Night @ Cape Fear Museum

and

7:30 PM – 9:45 PM - Public Observing @ Carolina Beach State Park

Observatory Update

by Jon Stewart-Taylor

The observatory Committee has had big plans to reach lofty goals using small steps since we first started the project. Each big goal was planned to be achieved in small incremental steps, each of which would make the observatory more usable as we completed them.

As the first small step, we prepared the site by cleaning up the shrubs and rough parts of the area. To be honest, that part wasn't really that small. A lot of hard work by committee members resulted in a clear safe area for lots of people to observe in. Next we laid out over a dozen observing sites, marked by solar lights. All but two of the sites have room for a car, telescope, equipment, and more. The remaining two have room for everything but the car.

Once the sites were defined, we created three observing pads. One is a square suitable for Dobsonian telescopes or small tripods. The other two are made in the shape of "Y"s, oriented to True North, with concrete blocks bedded in sand to maintain a flat and level footing for bigger tripods. These simplify and reduce scope set up time and especially polar alignment.



The step after that was the most expensive so far, but took only a little actual physical work on our part. We evaluated local dealers of pre-built sheds, bought one, and had it delivered and installed. As follow-up steps, we built a ramp at the shed door, and built a lean-to addition at the back of the shed. Now we have a place to store most of the club's telescopes and other astro equipment, as well as grounds maintenance equipment. The scopes can be moved out of the shed to the observing sites, ready to use in minutes, then quickly

put away at the end of the night.

One of our Our Big Goals is to enclose a pier and mount in a permanent observatory building. After much debate, we chose a SkyShed POD, because it can be installed fairly quickly with relatively little work and no need to climb ladders. The steps toward this goal were a permanent pier, electricity, a floor to mount the POD on, and the purchase and installation of the POD itself.

We started with installation of a permanent pier near the shed. It needed to be near, because we planned to run a 12 volt electricity connection from the shed to the pier to power a driven go-to telescope mount. The pier was built very inexpensively with cinder blocks with a buried concrete footing. Hank Lyon did a terrific job building a custom adaptor to hold an Orion Atlas mount at the top of the pier. The Atlas can hold scopes up to about 45 lbs. It has almost every object we're likely to want to observe in its database. Because it's permanently mounted on the pier (with a weather-proof cover!), it's basically ready to use in just a few minutes of adjustments once the scope is installed on it.



We ran 12 volts from a pair of batteries in the shed out to a pair of sockets in Hank's adaptor. As a follow-up step, we put a 100W solar panel on the roof of the shed, added a charge controller, and now automatically recharge the batteries with just a few hours of sunlight. The setup can run the Atlas for 8 hours, and be ready to go again the next night under normal weather conditions.

We're currently on the floor step. Because we're using a SkyShed POD, we're using a SkyShed plan for the floor. It is not "standard" carpentry, but requires less total work. For the last two weeks we've been installing and leveling cinder blocks to act as a footing for 4x4 floor joists for an 8' x 12' deck to hold the POD. We just completed the positioning of the joists on the blocks. Jon and Damain donated composite planking left over from home deck projects, and we'll be installing that beginning Saturday. We plan the deck to be complete by the first week in September. At that point, the pier and deck can be used until we're ready to start on the POD



installation.

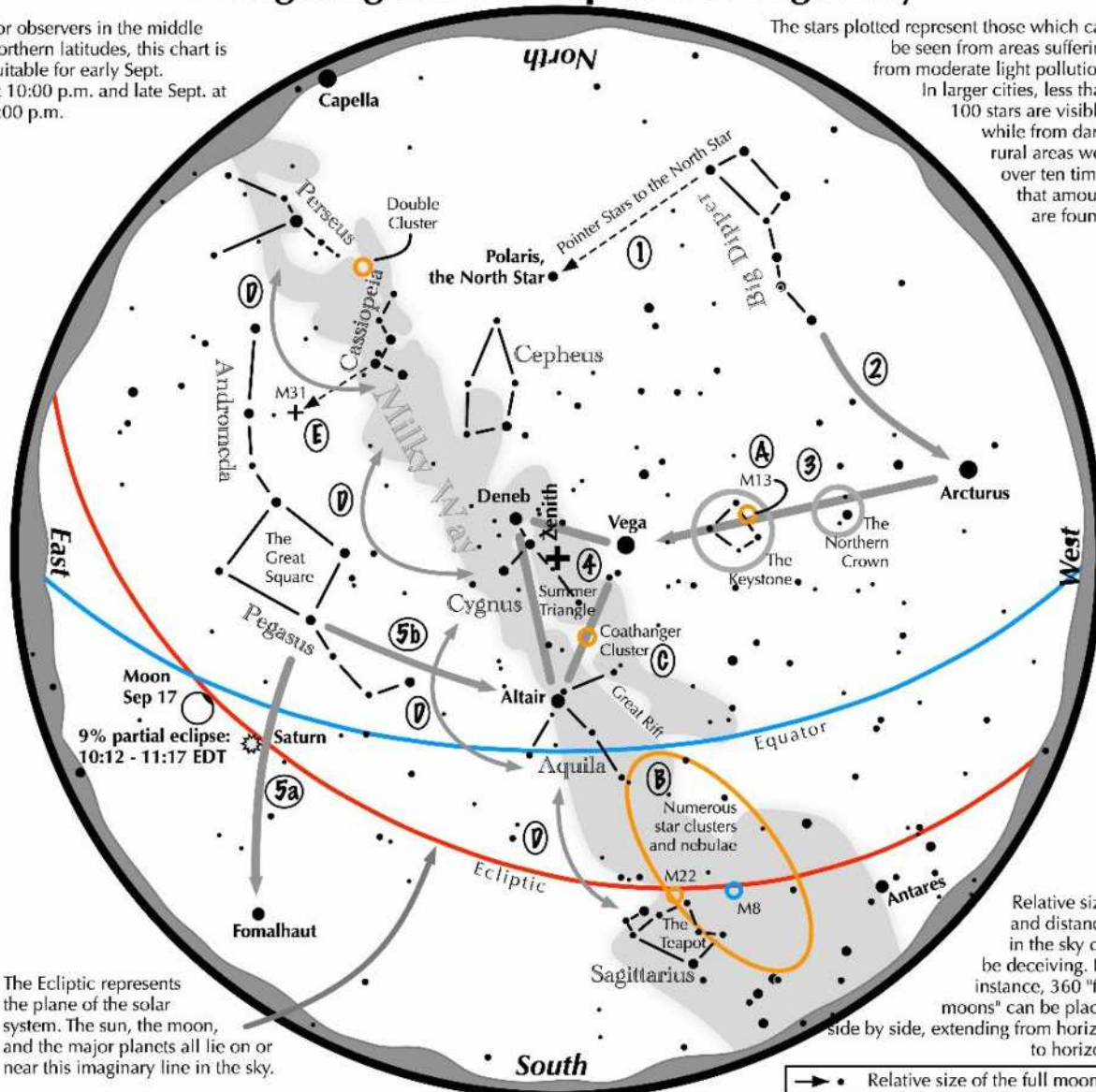
We've been keeping our eyes on the notices for used PODs for sale, but they've all been either too far away to go get, or overpriced. At this point, unless we're very fortunate, we'll need to buy a new POD from SkyShed. New PODs are not expensive, but they're not exactly cheap, especially with the cost of shipping from Canada. So, we're starting a fund drive. As incentive, Kathleen and I are making a matching pledge. We will match every donation towards the cost of the POD. You can donate by check to the club PO Box, or using the "donate" link on the web page. Please remember to mark your donation as being towards the POD.

This has been a long project, requiring the work of lots of people. Many thanks to Karl Adlon, Bill Cooper, Skip Hager, Hank Lyon, Perry Moon, George Pappayliou, Damain Smith, Lawton Smith, and Buzz Tucker,

Navigating the mid September Night Sky

For observers in the middle northern latitudes, this chart is suitable for early Sept. at 10:00 p.m. and late Sept. at 9:00 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 mid September night sky: Simply start with what you know or with what you can easily find.

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the September evening sky.
- 3 Nearly overhead shines a star of similar brightness as Arcturus, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 4 The stars of the summer triangle, Vega, Altair, and Deneb, shine overhead.
- 5 The westernmost two stars of the Great Square, which lies high in the east, point south to Fomalhaut. The southernmost two stars point west to Altair.

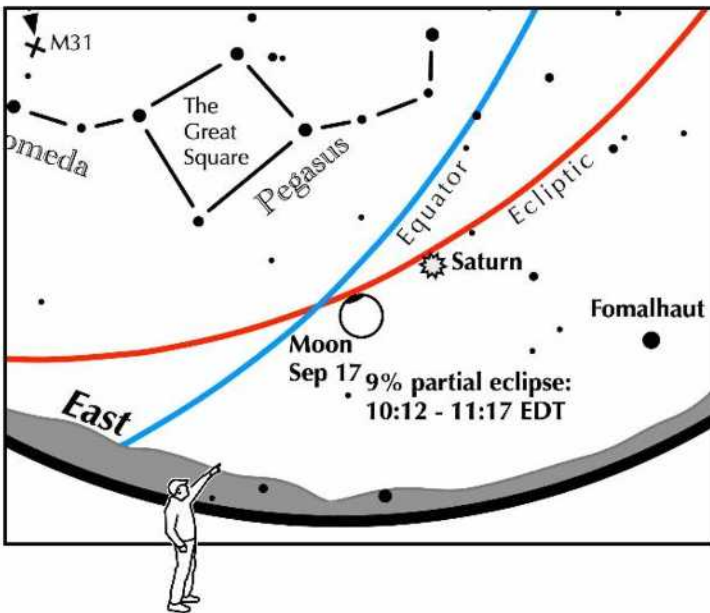
Binocular Highlights

- A: On the western side of the Keystone glows the Great Hercules Cluster.
- B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
- C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
- E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

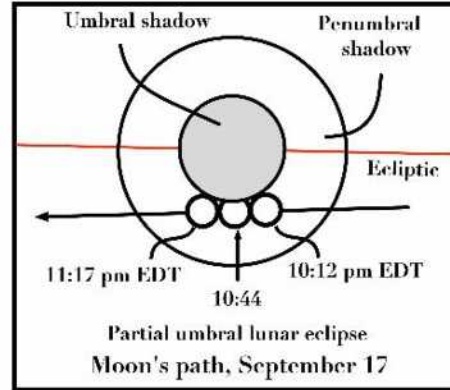
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A partial lunar eclipse that is a nibble, not a bite!



View to the southeast on September 17
from 10:12 through 11:17 pm EDT.
Mid eclipse lands at 10:44 pm



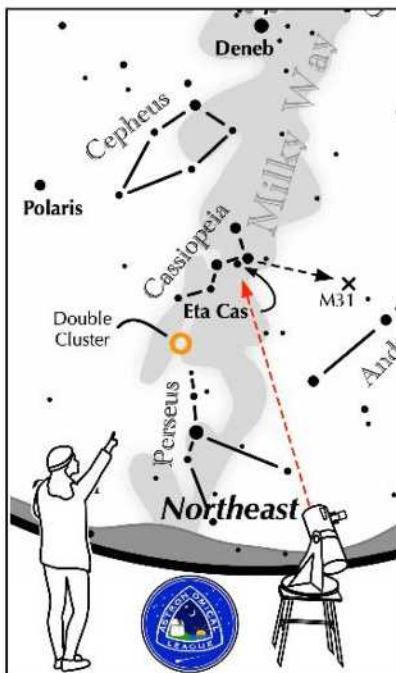
The Moon slides through a partial umbral eclipse

A very partial umbral lunar eclipse occurs on the night of September 17. Bring out the binoculars for a better look at Earth's shadow taking a nibble out of the moon. Only about 9% of the surface will be in umbral shadow. The event will be slight enough that the casual observer might not notice it.

Mid eclipse and the best view occurs at 10:44 pm EDT. West Coast observers will find it low above the southeastern horizon.



ASTRONOMICAL LEAGUE Double Star Activity



Other Suns: Eta Cassiopeiae

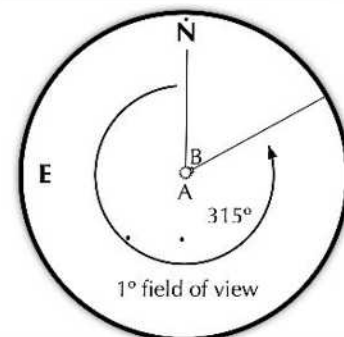
How to find Eta Cassiopeiae on a September evening

High in the northeast are the five moderately bright stars forming the "W" of Cassiopeia. The second star moving east along the W is Alpha Cassiopeiae. Eta is the dimmer star immediately to Alpha's northeast.

Suggested magnification: >30x
Suggested aperture: >2 inches

Beta Cassiopeiae

A-B separation: 13 sec
A magnitude: 3.5
B magnitude: 7.4
Position Angle: 319°
A & B colors:
yellow, purple?



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.

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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: Karl Adlon
 Associate VP: Jon Stewart-Taylor
 Secretary: George Pappayliou
 Treasurer: Bill Cooper
 ALCor: Hank Lyon

Dues: Dues for 2024 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

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