



CAPE FEAR Skies

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

May 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

Lately, I've been taking some graduate history courses at UNCW. In the American West seminar, the professor let me do a paper on Percival Lowell and the Lowell Observatory. (I'll be boring you with it later.)

What surprised me, as I was writing it, was discovering the amazing, sad story of Robert Burnham.

If you've been in the hobby awhile, you'll remember Burnham's Celestial Handbook, all three thick volumes of it. The book was stuffed with science, trivia and mythology about all 88 constellations, for stargazers who'd learned the basics and were ready for some more serious stuff. The book is a tad outdated now, but still intriguing.

No wonder amateurs liked it -- Burnham was an amateur himself. He was one of a host of largely self-taught stargazers in the Southwest who made actual contributions to the science. Clyde Tombaugh didn't enter college until after he had discovered a planet. Milton Humason, who started out as a mule driver on the construction of the observatory at Mount Wilson, never went to school past eighth grade. (Eventually, they gave him an honorary D.Sc., after he co-wrote major papers with Edwin Hubble.)

Then there was Burnham. Born in Chicago in 1931, he moved with his family to Prescott, Ariz., when he was 9. He graduated high school, served a stretch in the U.S. Air Force, then headed back to Prescott and a dead-end job as a shipping clerk. He never went to college.

The thing was, Butrnham caught the astronomy bug. (This being Arizona, he also collected rocks and minerals when the Sun was up.) He got a telescope, bought a bunch of books, and educated himself.

Eventually, in 1957, Burnham discovered a comet. It was a big deal in Arizona; Sen. Barry Goldwater presented him with an antique reflector that had been in his family since the mid-1800s.

Henry Giclas, the astronomer and asteroid-hunter on the Lowell Observatory staff, noticed, too. He offered Burnham a job taking photos for a long-term proper-motion survey of stars. For a bachelor astronomy nerd, it was like dying and going to Heaven. The job even included use of a cabin on the grounds.

Burnham spent 21 years doing astronomy at Lowell. In his spare time, he wrote and self-published his handbook. "Self-publish" was right: Early editions came in loose-leaf binders, which the children of Lowell staffers would help him put together.

Apparently, Burnham was a sort of savant -- an astronomical Rain Man, if you will. He never married, never had a girlfriend. He had few friends, period, outside of the amateur astronomy community. A Lowell staffer described him as the shiest person he ever met. Conversation was beyond him. Aside from his job, he spent all his time on a telescope (or, more rarely, rock-hunting).

Burhham's story had a sad ending. He eventually sold rights to the Handbook to Dover, hoping he'd make royalties like James Patterson. It didn't quite work out. Then, in 1979, the proper-motion survey concluded, and Lowell Observatory gave him a pink slip.

He never bounced back. Burnham disappeared from the Flagstaff, Ariz., area. Years later, the son of a Lowell astronomer happened to be in San Diego and spotted a skinny, bearded, shabby hobo in the park. It was Burnham. He was living in public housing and supporting himself by doing cat portraits in the park.

Burnham died alone at the age of 61. His name was misspelled on his grave marker, and he'd been so out of touch with his sister and other relatives didn't find out he'd died until two years later.

If there's a moral to this, I guess it's to be kind to the misfits and weirdos you run into in amateur astronomy. One of them might be another Robert Burnham.

Calendar

The full club calendar is available at

https://www.capefearastro.org/calendar.htm

Saturday, May 3

Public Observing at Carolina Beach State Park

Sunday, May 4

★ Gastronomy ★

Watch your email

★ Cape Fear Astro Monthly Meeting ★

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

Dr. Sheila Kannappan: "Chasing Awe"

Also simulcast via Zoom

Events in the Future

5/3 - Public Observing at Carolina Beach State Park

5/4 - CFAS Monthly Meeting. Presentation: Dr. Sheila Kannappan: "Chasing Awe"

6/7 - Public Observing at Carolina Beach State Park

6/8 - CFAS Monthly Meeting. Presentation: Walter Fowler of CHAOS: Gravity Assist Flyby Maneuvers.

7/5 - Public Observing at Carolina Beach State Park

7/13 - CFAS Monthly Meeting. Presentation: Karl: something about Planetary Imaging

8/2 - Public Observing at Carolina Beach State Park

8/10 - CFAS Monthly Meeting. Presentation: Scott Jackson: "Galileo discovers Neptune"

8/30 - Public Observing at Carolina Beach State Prk

9/14 - CFAS Monthly Meeting Presentation: Karl: the rest of something about Planetary Imaging

9/27 - Public Observing at Carolina Beach State Prk

10/4 – Intl Obs the Moon at Cape Fear Museum

10/12 - CFAS Monthly Meeting. Presentation: TBD

10/25 or 11/1 - Public Observing at Carolina Beach State Prk

11/8 - CFAS Monthly Meeting. Presentation: TBD

12/14 - CFAS Holiday Celebration

May Meeting Presentation Topic: Chasing Awe

by Jon Stewart-Taylor

For the May meeting Presentation, we have Dr. Sheila Kannappan's "Chasing Awe".

> "After chasing last April's total solar eclipse to Texas, I decided to make 2024 the perfect Year of Awe by chasing the northern lights for two months in Minnesota in the fall. With solar activity at an 11-year maximum, I was lucky to see the aurora at least five times, depending on how you count. In this talk I'll share a taste of the wonders we witnessed and what we learned about how to maximize aurora chasing success."

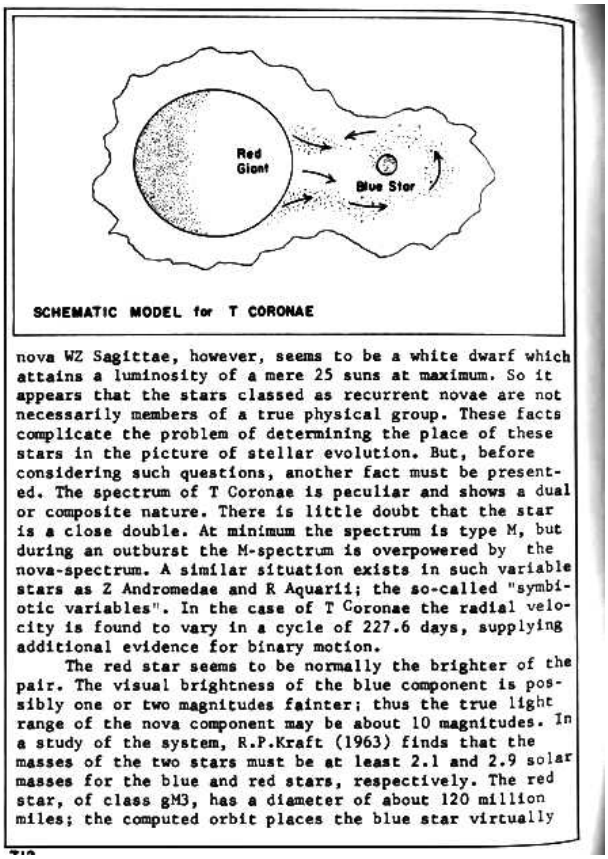
Burnham's Celestial Handbook

by Jon Stewart-Taylor

Given Ben's presidential note, I thought it would be appropriate to mention that the club library has two sets of Burnham's, one hardback and one paperback. Volume 1 covers the constellations Andromeda through Cetus. Volume 2 is for Chamaeleon through Orion. Volume 3 finishes with Pavo through Vulpecula.

For each constellation, Burnham has tables of multiple and variable stars. For the the bright stars, and the major (and some minor) deep-sky objects (Messier and NGC), there is some text. Sometimes a lot of text. There may be diagrams of things like the orbits of double stars. For the more charismatic deepsky objects, there are black and white images.

Here's a diagram and a page of text (at right) from the description of the "Blaze Star" (T Corona Borealis, currently expected to go nova Real Soon Now):



nova WZ Sagittae, however, seems to be a white dwarf which attains a luminosity of a mere 25 suns at maximum. So it appears that the stars classed as recurrent novae are not necessarily members of a true physical group. These facts complicate the problem of determining the place of these stars in the picture of stellar evolution. But, before considering such questions, another fact must be presented. The spectrum of T Coronae is peculiar and shows a dual or composite nature. There is little doubt that the star is a close double. At minimum the spectrum is type M, but during an outburst the M-spectrum is overpowered by the nova-spectrum. A similar situation exists in such variable stars as Z Andromedae and R Aquarii; the so-called "symbiotic variables". In the case of T Coronae the radial velocity is found to vary in a cycle of 227.6 days, supplying additional evidence for binary motion.

The red star seems to be normally the brighter of the pair. The visual brightness of the blue component is possibly one or two magnitudes fainter; thus the true light range of the nova component may be about 10 magnitudes. In a study of the system, R.P.Kraft (1963) finds that the masses of the two stars must be at least 2.1 and 2.9 solar masses for the blue and red stars, respectively. The red star, of class gM3, has a diameter of about 120 million miles; the computed orbit places the blue star virtually

If you've never encountered these before, I strongly recommend you give them a try. They're good for both browsing, and more directed reading on your specific observing targets.

To reserve the Handbook, follow this link:

https://www.librarycat.org/lib/CFAS/search/text/burnhams

A Used Telescope I Bought

by Karl Adlon

I bought a used Celestron C8-N Newtonian 8" f5 optical tube assembly (OTA) with mounting rings, a carry bag for it and a laser collimation tool all for only $250. Since this OTA is advertised for astrophotography, I though it should be plenty good for visual.

The first issue was the focuser which was very sloppy. Taking it apart I found one of the plastic slides (not bearings!) was out of position, which I fixed. This helped but this focuser will never be good enough for astrophotography, but good enough for visual.

The second issue was the collimation. The secondary was obviously rotated from the correct position. I got the Cat's Eye alignment tools out and fixed that.

Third issue: in-focus the star became a / slash and out-focus a \ slash. Astigmatism! But in the secondary or the main mirror. I replaced the secondary with one from a 10" and that cured it. I read that gluing the secondary to the holder with a big blob of glue will warp the secondary as the edge of the blob cures before the center. I removed the 8" secondary, cut the mirror off of the holder and re-glued it with 3 small blobs of glue in a triangle.

This morning I took the scope to the driveway and aimed it at Altair. *No astigmatism!!*

From the Email Archives – 2025 SWSP

The 2025 **S**tate **W**ide **S**tar **P**arty was held April 25 at Carolina Beach State Park. Here are a couple of emails after the event:

Terry said:

It turned out to be a great night. The cloud cover, while high and thin, didn't prevent halfway decent viewing of Jupiter and it's moons in the TV-127is. While the bands were kind of washed out, they were visible and the moons added some interest to the view. Everyone who viewed through the scope went away pleased. As always, the line was steady from the time Jupiter became visible until the event ended around 10:00. When Jupiter dipped below the trees, I attempted to find M35. I thought maybe I had found it, but the sky was so bright, it may or may not have been the cluster. If it was, it was very washed out. At Jon's suggestion, I pointed to Alcor and Mizar to finish out the night.

It turned out to be a great ending to a long standing tradition. I will miss it.

Perry said:

Last night was a pleasant surprise to me. There was a non-stop line of people with quite a few kids that were so excited to get a view through the 10” Dob. Views of Jupiter were sharp from dusk with 4 moons clearly on display. When Jupiter started setting behind the trees I was able to get another 10 minutes by moving the scope to the middle of the road. After Jupiter set I set up to give views of Mars. The line was consistent until past the event time.

No 2025 SWSP for Me

by Karl Adlon

I’m a member of the Cape Fear Cruisers car club and their Red, White & Blue spring car show was the day after SWSP. I again volunteered to redirect any cars the attempted to bypass the city supplied barriers starting at 6:30 AM, so I missed the star party.

And I do miss not letting dozens of people of all ages see the sights through the telescope. Maybe someone will pull a rabbit out of the hat and there will be a SWSP at Carolina Beach State Park, but I’m not counting on it.

I did take a telescope to Ingram Planetarium’s SWSP. The skies mostly uncooperative but we did get views of the Moon early and quick peaks of Jupiter later. I’ll help them next year if I don’t have a conflict.

My ‘74 MGB

Damask red, but I call it

Cabernet Red

It’s not a good scope hauler.

Presentation Coordinator's Report

by Jon Stewart-Taylor

As presentation coordinator, I am responsible for finding presentations for each monthly meeting. For 2025, we're almost full. At this point, we only need a presentation for October.

Planned presentations:

May: Dr. Sheila Kannappan: “Chasing Awe”

June: Walter Fowler: Gravity Assist - including a live demonstration

July: Karl Adlon: “Planetary Imaging part one”

August: Scott Jackson: “Galileo discovers Neptune”

September: Karl: “Planetary Imaging part two”

October: TBD

November: Frank Rich: “Using Setting Circles”

December: Holiday celebration

If you have a presentation in you longing to come out, or if you know someone who could cover an Astronomy, Space Science, or Physics topic at our level, please contact me. Even though 2025 is nearly full, we still have most of 2026 waiting for us.

Karl’s Upcoming Presentations

by Karl Adlon

I have used a ZWO ASI120MC camera on a scope, used FireCapture to record a video, used Autostakkert to get the best video frames and stack them and Registax to bring out the details in the final image.

My plan is:

- for the July Presentation to talk about FireCapture and demonstrate Autostakkert, and
- for the September Presentation to show what Registax 6 can do, which is more than I had originally thought.

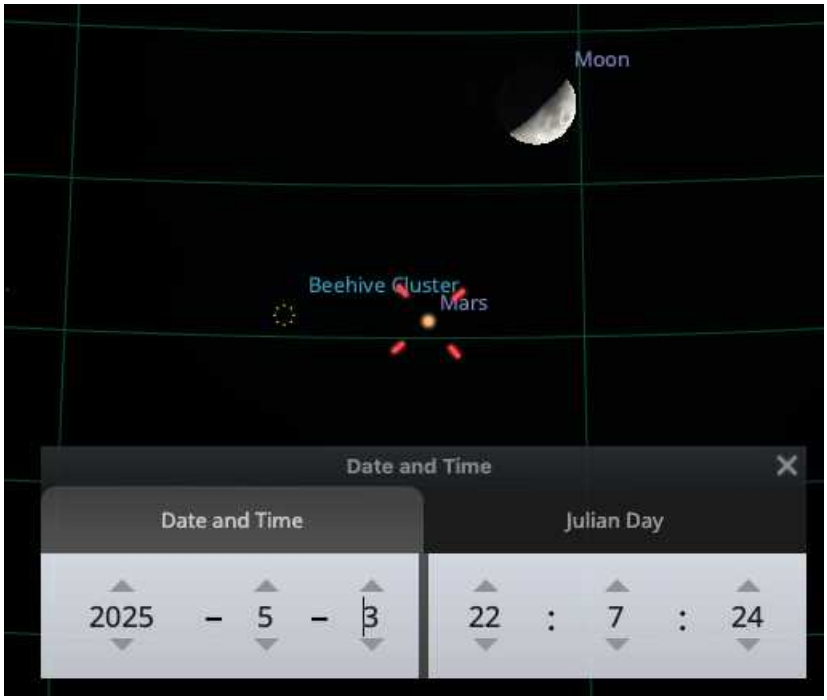
Mars meets the Beehive in Cancer

by Jon Stewart-Taylor

If you've been keeping an eye on the planets this spring, you've seen Mars move through Gemini. First it looked like an oversized Aries, then a straight line. Now Mars is in Cancer, and approaching a near pass of M44, the Beehive cluster.

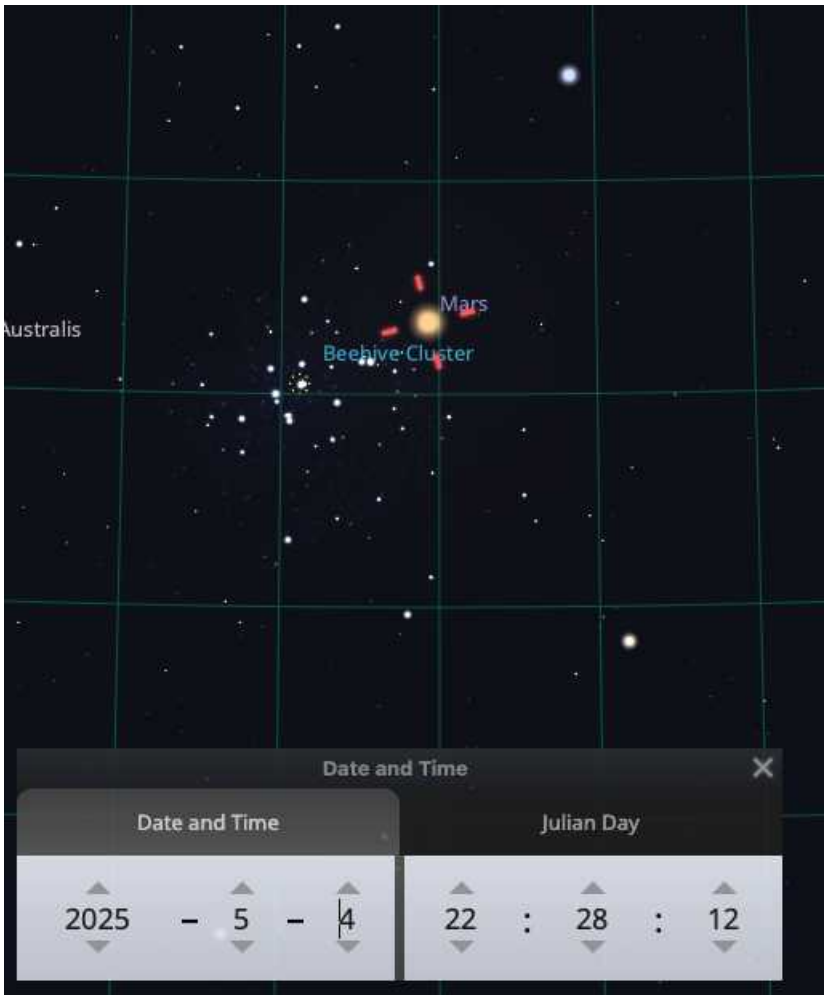
On May 3rd, the Moon, Mars, and M44 will fit easily within a binocular field of view. The nearly-first-quarter moon may wash out the stars of the Beehive, but you may be able to enjoy the whole view, then slide the moon out of the FOV to better showcase the planet and cluster. This may be something to show people at the Public Observing session at Carolina Beach State Park.

A Stellarium snapshot:



The closest approach will be on May 4th, when Mars will actually be less than a degree from the center of the Beehive, This should be an excellent target for both binoculars and telescopes if they have a FOV of a degree or more.

Another Stellarium snapshot, zoomed in a bit closer:



As always in SE NC, the weather is a concern. Although we're still 5 days away from closest approach, the current forecast is:

Saturday Night: A chance of showers and thunderstorms before 2am. Partly cloudy, with a low around 55.

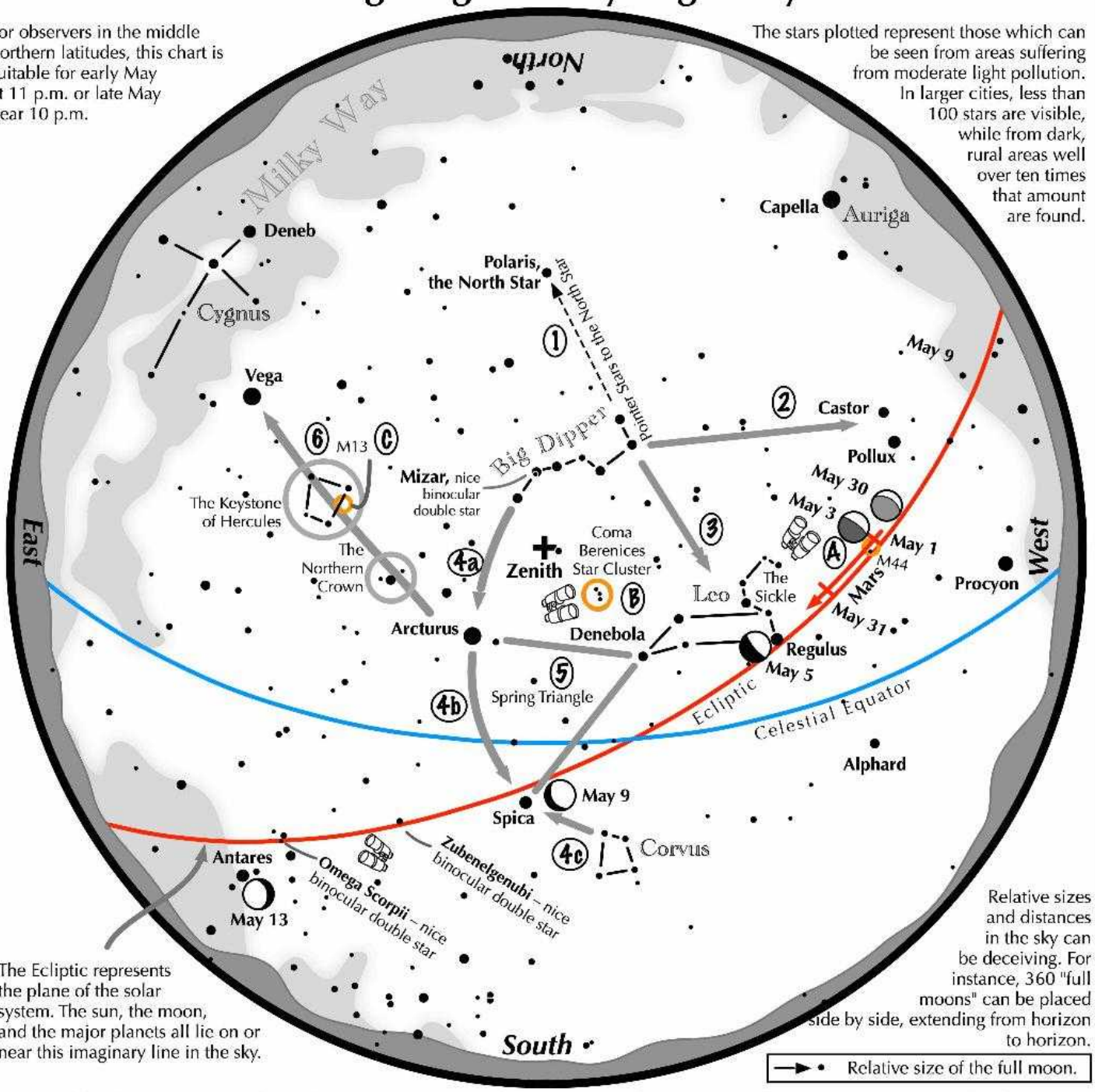
Sunday Night: Mostly clear, with a low around 50.

Still a bit far off, so the forecast may change. If you get a chance, keep an eye on Mars as it nears and passes the Beehive over the next week.

Navigating the May Night Sky

For observers in the middle northern latitudes, this chart is suitable for early May at 11 p.m. or late May near 10 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.

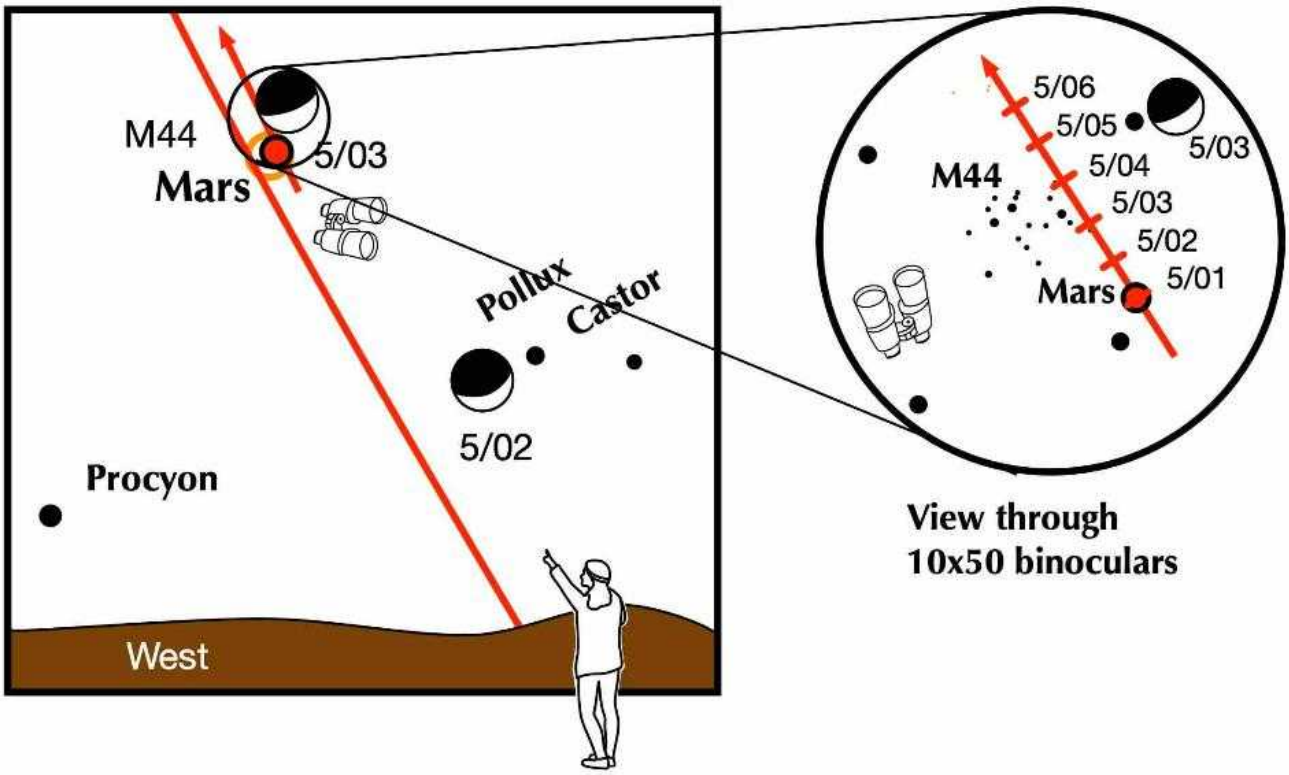
Navigating the May night sky: Simply start with what you know or with what you can easily find.

1. Extend a line northward from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
3. Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
4. Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
   Confirm Spica by noting that two moderately bright stars just to its southwest form a straight line with it.
5. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
6. Draw a line from Arcturus to Vega. One-third of the way sits "The Northern Crown." Two-thirds of the way hides the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.

Binocular Highlights

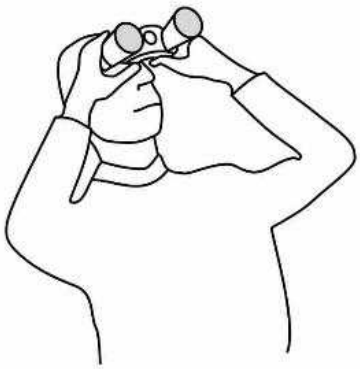
A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **B:** Look near the zenith for the loose star cluster of Coma Berenices. **C:** M13, a round glow from a cluster of over 500,000 stars.

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



Beginning on May 1, look to the west-northwest 90 minutes after sunset.

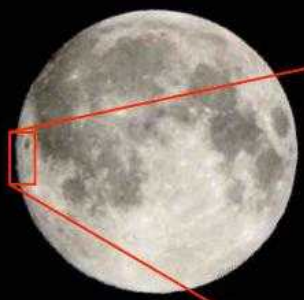
- The twin stars of Gemini, Castor and Pollux, will be found forming a horizontal bar low above the horizon.
- On the following evening, the crescent moon moves near Pollux, almost forming a straight line with it and Castor.



- Red Mars slides toward M44, aka the Beehive Star cluster. Use binoculars to find Mars inching closer to the many stellar bees.
- On May 3, the thick crescent moon joins Mars sitting to the upper left of the red planet and above the bees.
- Over the next few evenings, the Red Planet moves past M44, leaving it on May 5.

Mare Orientale

... this most astounding impact basin is only partially seen



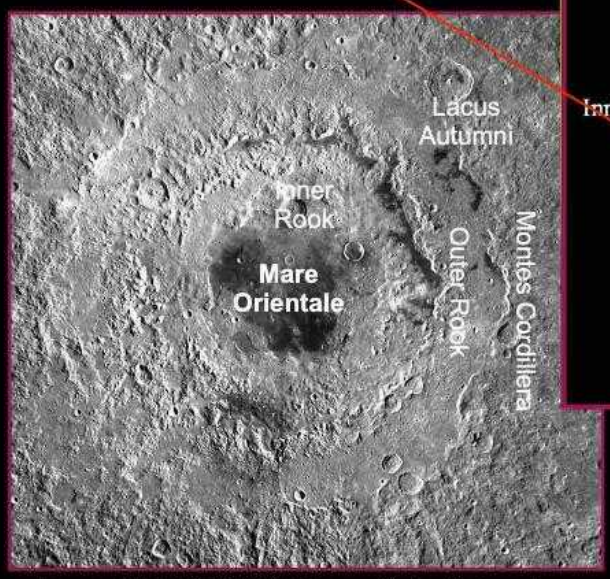
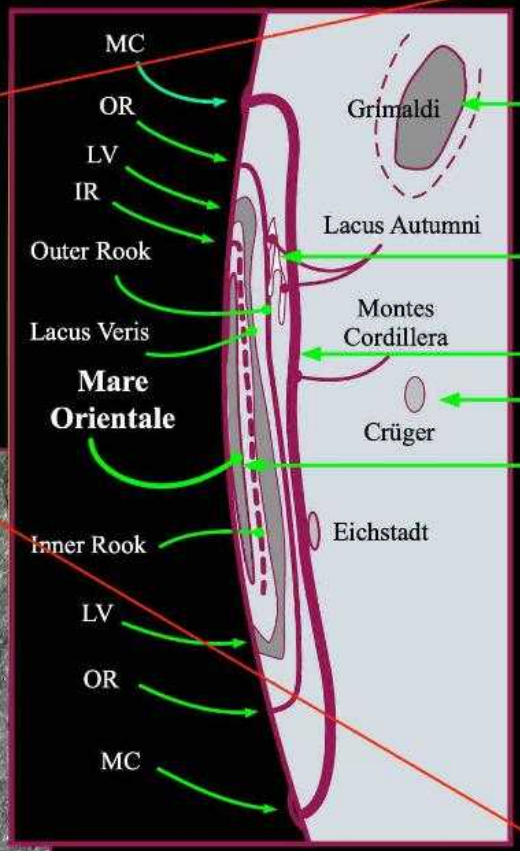


image: NASA/GSFC/ Arizona State University



Mare Orientale
Best seen in 2025
the mornings around May 18, June 18, and July 16

A good viewing of Mare Orientale requires that the Moon be at or near maximum western libration. This happens on three, four, or five days in some, but not all months. Of course, it should not hide in the lunar night, which immediately eliminates fifteen days each month. The three mornings leading up to new Moon are also poor times because the waning thin crescent lies too close to the horizon to give a sharp enough image for a clear, meaningful view.

As a result, opportunities for studying Mare Orientale are infrequent, occurring on fewer than twenty days each year. Generally, four months running present three, four, or five good opportunities each, followed by a string of nine or ten months that present no suitable occasions for viewing it. And then there is the weather!

Identifying Orientale's fascinating features demands steady seeing and moderate magnification.

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	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/
Astroleague Home Page	www.astroleague.org
AL Related News, Information and Reminders	Awards: Congratulations to Jon Stewart-Taylor for completing the Herschel 400 Observing Program!! More about this in the upcoming April regular CFAS meeting. Information: The AL hopes to resume hard copy issues of Reflector with the June 2025 edition. Click HERE for the Astroleague News Page and be sure to check the Astroleague Home Page weekly for new and important posts. Contact Hank Lyon, hlyon8448@gmail.com, for any changes to your Reflector delivery preferences (US Mail, Email or Both).

The Astroleague Correspondent (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 anything new.

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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