THE

FLINT RIVER

OBSERVER

NEWSLETTER OF THE FLINT RIVER ASTRONOMY CLUB

An Affiliate of the Astronomical League

Vol. 29, No. 11 November 2025

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1.When was the first Telescope PATENTED?
2.What Observatory was used in the James Bond movie "Goldeneye?
3.What was the significance of the Observatory used in the movie?

4. What phenomenon was recorded in 1054 and by what 2 cultures and was called, "Guest Star"

5. What is common with Polaris, Kochab (Beta Ursae Minoris), Thuban (Alpha Draconis) and Alteramin (Alpha Cephei)?

6. The Mayans were great at studying math and the solar system. In studying Venus, they said that the synodic period of Venus was 583.92 days. How far of were their calculations?

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Club Calendar:
FRAC Meeting:
Thursday, November 13, 2025, 7:30 pm at UGA Gardens
Bring your **Binoculars & Telescopes** and items you have made for personal Astronomy usage

Public Observing Events:

🎬 11/7/2025 5:30 pm — Indian Springs State Park Public Observing Event, Flovilla, GA (In case of clouds, the event will be held the following evening).
🎬 11/13/2025 7:30pm — Club meeting at the UGA Research and Education Garden Building in Griffin, GA and on Zoom.

Please continue to check your email and the FRAC Facebook group https://www.facebook.com/groups/2002160466558902 for news updates.

"The stars we are given. The constellations we make. That is to say, stars exist in the cosmos, but **constellations are the imaginary lines we draw between them**, the readings we give the sky, the stories we tell."
— Rebecca Solnit, Storming the Gates of Paradise: Landscapes for Politics

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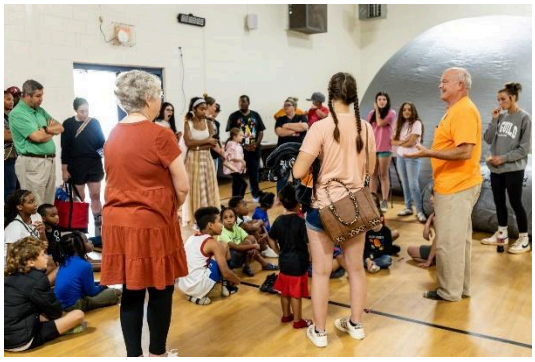
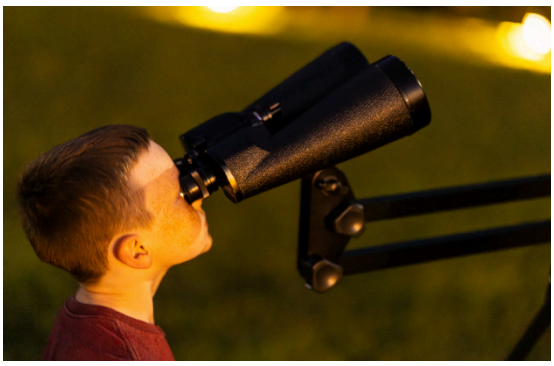
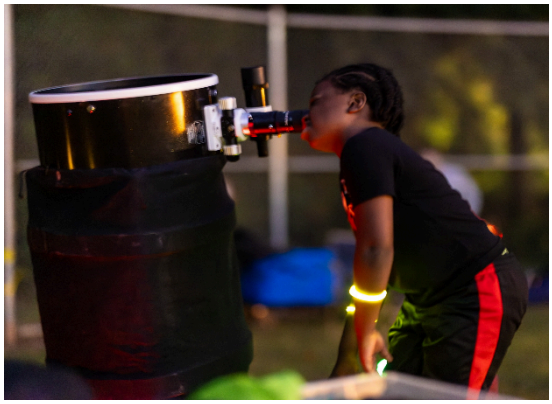
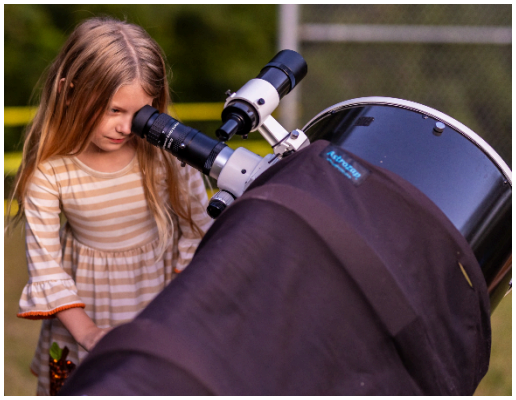
President's Message:

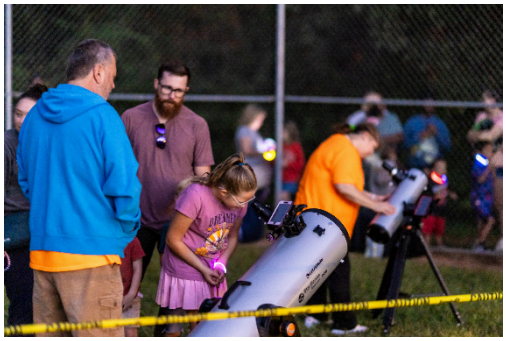
WOW, October was a very active month. We started off with the Cresent Road school Astronomy night. There were 7 members present to help out and making it a very successful time; George Ruff, King Davis, Ann Angelheart, David & Rosanne Stone, Tom Partin and myself. The event was well organized and all present were very well mannered and pleasant to work with. There was discussion with the organizer in how we could fine tune next year's event even further.

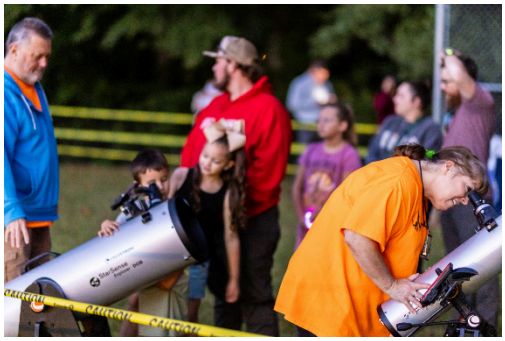


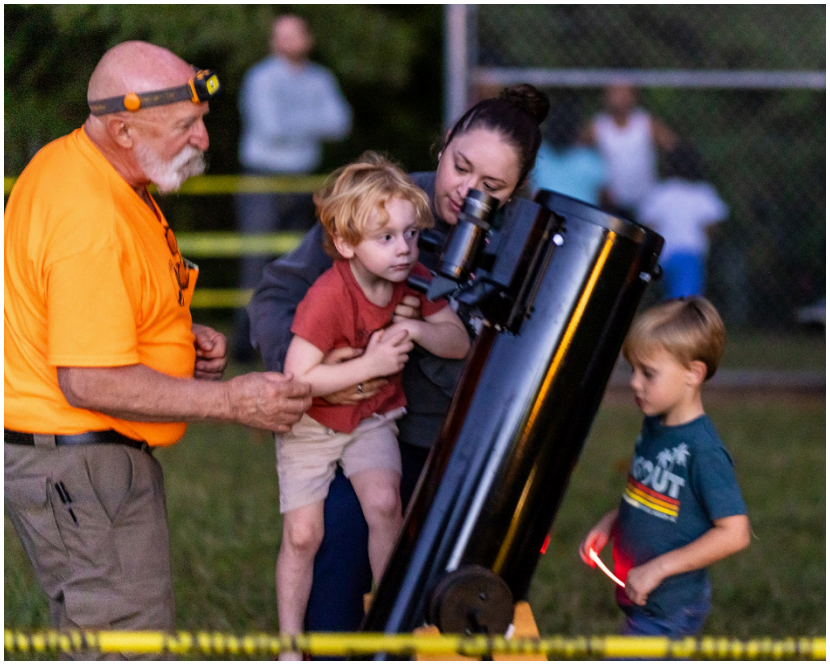






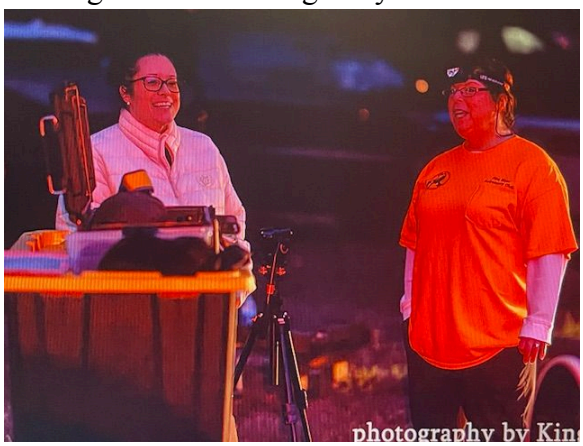


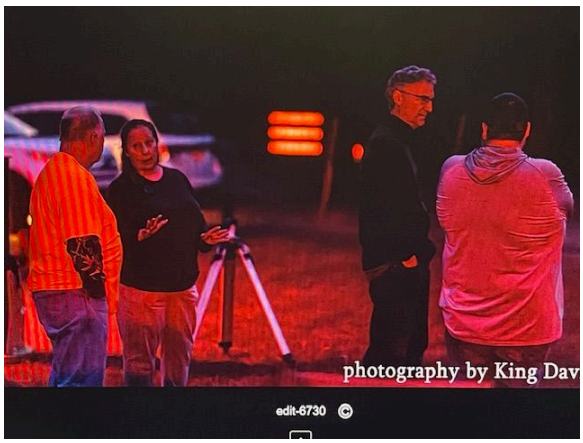


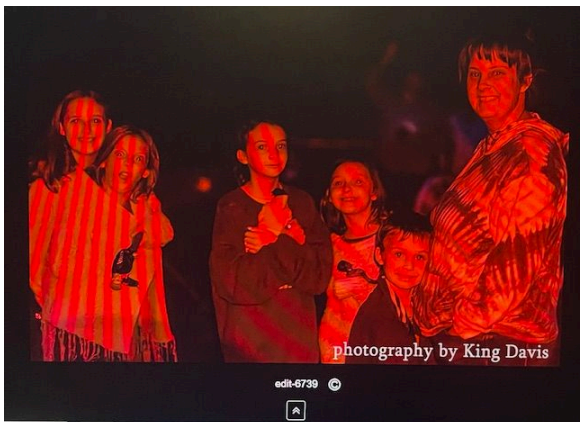


The October meeting for FRAC was held at the Griffin Regional Library and the Clouds did not cooperate with us that night as we set up telescopes after the meeting on the sidewalk. Everyone there when the clouds gave us a break did get to see Saturn through Brennan's scope. We also had four visitors, Dana Bostic (VP of the Raliegh Astronomy Club) Jenny Wang, Caleb Tally and Darren Pritchett (a former student of George Ruff).
On the very next night was a public viewing at Indian Springs State Park
The following week we were out at Lake Horton for a great community sharing event. The skies fully cooperated right up till quitting time and then the clouds came in. There were 106 people that had signed up for the night but ONLY 76 showed up. We had Larry & Twila with their scopes, David & Rosanne Stone with their scopes, Wade Simmons had his scope, I set up with a scope and Dianne Wilds and Ann Angelheart also came and were of great assistance. Amy from Fayette County Recreations asked for everyone in the future to please have RED LAMPS around their telescopes to help everyone see where the telescopes were located. We did have a large number of small children that were a little rambunctious. The Cresent Rd group were much better under control IMO.

Instead of going to JKWM in October, FRAC went to Sprewell Bluff and it was another public viewing event that was greatly attended.



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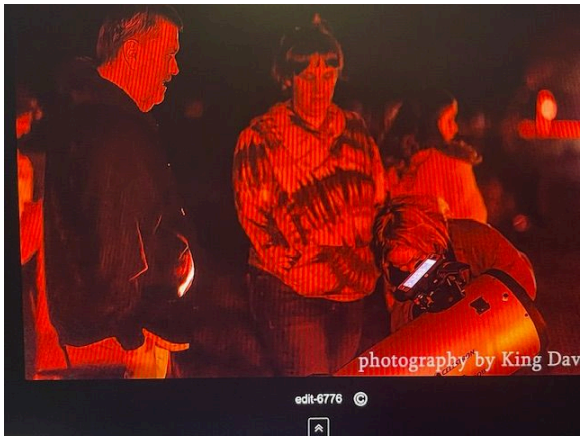
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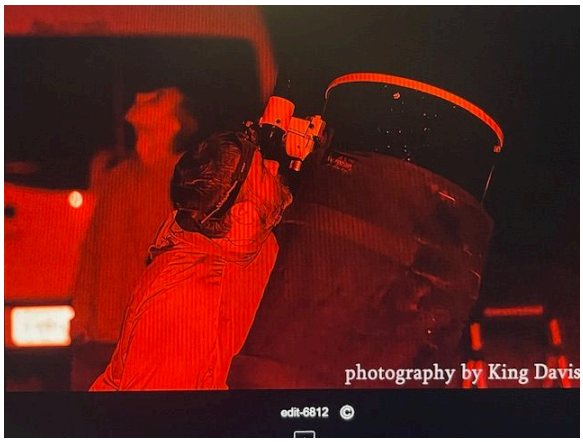
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photography by King Davis
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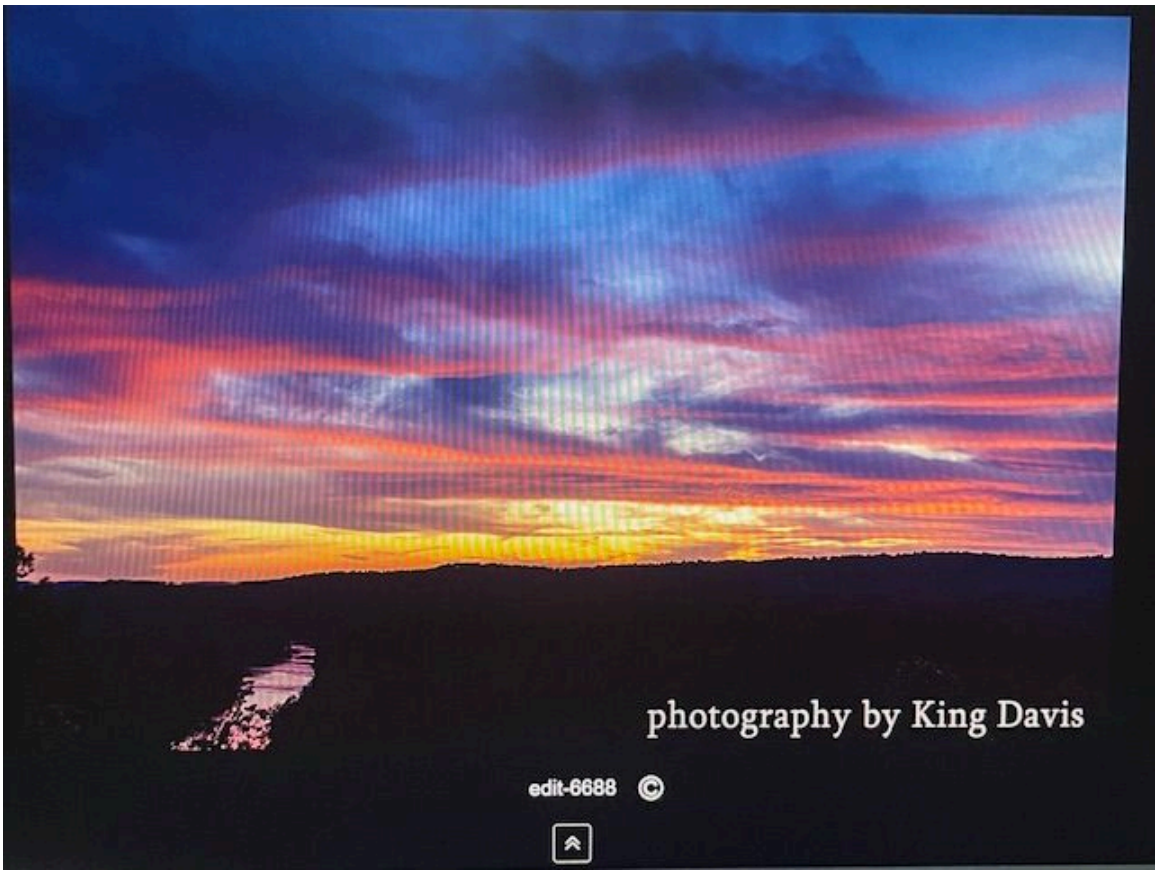

Don’t forget the meteor showers that are coming up.

Leonids November 17–18, 2025

Geminids December 13–14, 2025 this can produce 75 meteors per hour

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Christmas is just around the corner and again we will be having a relaxed social time together with food and gifts at the Dec 11 meeting. Asking everyone to bring a desert or entrée, or both if you want to. Also bring a gift to give away in an exchange. FRAC will supply the plates, silverware, cups, ice, napkins, cokes (some may call POP), coffee and water. I have been told that again this year there will be some astronomy gifts given away.

Another event that needs mentioning will be Dec. 6th at the Gardens on Ellis Rd. We will start at 9am and go till maybe 1pm. The class will be taught by Carlos. Class will be using free software to enhance your raw astronomy pictures. You MUST bring your laptop and power cord. The book, **Astrophotography Image Processing with GraXpert, Siril & GIMP** will be the base for the class and you will need to download the FREE software GraXpert, Siril and GIMP before coming to class. Carlos will be instructing from one common picture that everyone will also be using. Everyone that is planning to attend must notify me (ironstash@comcast.net) no later than Nov 29, 2025; that will be the cutoff date to register.

Alfred

"It's lovely to live on a raft. We had the sky up there, all speckled with stars, and we used to lay on our backs and look up at them and discuss about whether they were made or only just happened."
— Mark Twain

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FRAC T-Shirts
FRAC T-shirts are still available! They are $20 at most FRAC gatherings.

Club dues ---- Please turn in **ASAP** if you have not already done so. $15 by cash, check or by Venmo to Mark Sutton. Make check out to Flint River Astronomy Club sent to Mark's address or at the meeting, or pay through Venmo@fracmoney24 (search for a business account)

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"Those shining stars, he liked to point out, were one of the special treats for people like us who lived out in the wilderness. Rich city folks, he'd say, lived in fancy apartments, but their air was so polluted they couldn't even see the stars. We'd have to be out of our minds to want to trade places with any of them."
— Jeannette Walls, The Glass Castle

Trivia answers

1. **1608** and called it a kijker (looker)
   https://nightskypix.com/history-of-the-telescope/

2. **Arecibo Observatory**

3. this telescope observatory is most well-known for the **Arecibo message** that was sent out towards a cluster, Messier 13 back in 1974.

4. The explosion created the CRAB Nebular and was recorded by the Chinese and Anzia Indians, but was not recorded by the Europeans or any other culture.

5. They were at one time the Polar star

6. They were dead on the money

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"Look at the stars. It won't fix the economy. It won't stop wars. It won't give you flat abs, or even help you figure out your relationship. But it's important. It helps you to remember that you and your problems are both infinitesimally small and conversely, that you are a piece of an amazing and vast universe."
— Kate Bartolotta

Members Corner:
Heart Nebula
Photographed 10/1/25 and 10/14/25
Alan Pryor

The Heart Nebula is also known as IC 1805. It contains an open cluster of stars, and it is an emission nebula in the constellation of Cassiopeia. It is actually a large star forming region which explains the open star cluster. The nebulosity has a lot of ionized hydrogen atoms along with ionized oxygen and sulfur. The Heart Nebula is large, and it spans an area of the sky that is about 2 degrees wide. It is about 7,500 light-years away, and it is about 300 light-years in diameter.

Nebulae do not have many atoms or molecules per cubic inch. It can be as low as 2 atoms per cubic inch, but star forming regions (like parts of IC 1805) can have up to 15 million atoms per cubic inch. Compare that to our atmosphere where 1 cubic inch contains about 400 million trillion molecules. In a nebula where there is a lot of higher energy radiation there are a lot of ionized atoms. In other nebulae elements like hydrogen and oxygen exist as individual atoms, or they may have formed molecules.

In November and December when Cassiopeia is high you can find the Heart Nebula by looking at Segin, the eastern most star in Cassiopeia's "W". Then move 5 degrees east. The star cluster should be visible.
A small scope can reveal the star cluster. However, the nebulosity is very faint, and it will take a 16-inch scope with a UHC filter to reveal it visually. Because ionized atoms of hydrogen, oxygen and sulfur are present the use of Hydrogen Alpha, Oxygen-III and Sulfur-II narrowband filters are useful for photographing it in narrowband photography.

This photo was taken with 24 ten-minute frames with a Hydrogen Alpha filter, 3 sets of 5 minute frames in red, green and blue and 12 frames of 5 minute luminance (7 hours of total exposure). A 5-inch refractor and FLI camera were used to get a field of view of over 2 degrees.

A full-sized can be found at the following address:
https://photos.google.com/search/CgAiCBIGCgRyAgoAKLzKy7GgMw%3D%3D/photo/AF1QipNiVgbMmH_9xb-4vdp3jrKBk9OSa-6DZf14hNd8

Eugene Rush:

The Bat portion of NGC 6995 - Photo taken by Eugene Rush on 9/29/25

The Bat Nebula consists of a particular region of the Eastern Veil Nebula that takes on the form of a Bat. The Veil Nebula is often referred to as the Cygnus Loop which is a great sphere of expanding gas from a supernova some 10-20 thousand years ago. At the time of its explosion, the supernova would have been visible on Earth as being brighter than the planet Venus and would be visible during the day. The Cygnus Loop is located 2,400 light-years away and is large enough to span the equivalent of 12 full moons across the sky. Catalog designations that are associated with the Loop include NGC6960, 6995, 6974, 6970, IC1340 and Caldwell 33/34.The image was made using a Sharpstar 94EDPH refractor with a ZWO ASI585MC pro camera with a Svbony dual-band filter. The image consists of 15, 180-second subs, taken from Sharpsburg Ga