

THE FLINT RIVER OBSERVER

Newsletter of the FLINT RIVER
ASTRONOMY CLUB
(an affiliate of the Astronomical League)

Vol. 11, No. 11 **January, 2008**

Officers: President/Alcor, **Curt Cole**; Vice President/Newsletter Editor: **Bill Warren**; Secretary-Treasurer: **Irene Cole**; Board of Directors: **Larry Higgins, Tom Danei** and **Felix Luciano**.

Webmasters, **David Ward** and **Tom Moore**; FRACgroups moderators: **Steve Knight** and **Tom Moore**; Ga. Sky View/Astronomy Day Coordinator, **Steve Knight**; Observing Chairman/Public Observing Coordinator, **Larry Higgins**; Program Co-Chairmen: **Larry Higgins** and **Bill Warren**; Publicity: **Curt Cole**; NASA contact: **Felix Luciano**; and Event Photographer, **Tom Danei**.

Club mailing address: 190 West James Circle, Hampton, GA 30228. Web page: www.flintriverastronomy.org; discussion group at FRAC@yahoogroups.com.

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Club Calendar. Fri.-Sat., Jan. 4-5: Cox Field observings (at dark); Thurs., Jan. 10:

club meeting (7:30 p.m., Stuckey Hall on the UGa-Griffin campus); Fri.-Sat., Jan. 11-12: Cox Field observings (at dark).

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President's Message. The Iowa caucus is approaching, as are FRAC elections and appointments. Many politicians are eager to get into public office (lots of prestige and money), but getting people to hold unpaid positions in small organizations can be difficult. Getting voters/members to tell the leadership what they want can be equally difficult.

A while back, the state was rewriting the regulations governing restaurant inspections, and invited public comment. I wrote to express my opinion that we needed stronger rules, not weaker as the restaurant industry wanted. According to a later newspaper article, out of the entire state of Georgia, only about 30 comments were received from the public. I assume that many more than 30 people had an opinion on the matter, but few took the time to speak up. The industry and their lobbyists responded in much greater force, so the weaker regulations won out.

Many of us grew up in an era of civil rights marches, the women's movement, American Indian Movement, etc. People felt their voices were being ignored and they wanted a say so in how their government worked. Let's all keep the spirit of that era alive by offering input into the political process, whether at the national, local, or club level.

Your voice is valuable. Please use it wisely and use it often.

-Curt

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Last Month's Meeting/Activities. Steve Bentley did an outstanding job of leading our two-man, indoor/outdoor astronomy presentation for about 40 children and parents at the Peachtree City Library on Nov. 30th.

Steve's wife Betty would have joined us for the trip, but her facial mudpack hardened that morning and she was afraid of being mistaken for **Thing**, the rock-like Fantastic Four superhero.

Thirty-five attendees, including 28 members – **Curt & Irene Cole; Doug & Laura Maxwell; Tom & Cathy Moore; Joel & Anne Simmons; Tom & Brit Danei; Charles, Lisa, Erica & Jeffrey Anstey; Steve & Betty Bentley; Ken & Doris Walburn; Dan Pillatzki; Larry Fallin; Steve Knight; Dwight, Betty & Laura Harness; Bill & Louise Warren; Dr. Richard Schmude; and Larry Higgins** – and seven guests (**Angela, Ashley & Joshua Smith, Dawn Knight, David Clay and Joe & Martha Auriemma**) met at Ryan's in Griffin for our annual Christmas dinner/meeting. FRAC veterans could not recall a higher attendance for any club meeting in FRAC's nearly eleven years of existence. The food and door prizes were excellent and, in keeping with the family-oriented nature of the occasion, yr. editor's and Dan P.'s off-color jokes were whispered, not told aloud.

Dec. was pretty much a (waterless) washout as far as Cox Field observings were concerned. The one good evening brought out five of us – **Larry H., Curt**, guests **Greg & Patty Cosnotti** (who joined FRAC that night) and yr. Editor – for about 2 hrs. of good skies, after which the clouds rolled back in.

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This 'n That. We want to extend our heartiest welcome to FRAC's newest members, **Greg & Patty Cosnotti** of Hogansville, GA (near Lagrange) and **Mike Stuart** of Griffin. The Cosnottis have a new Celestron C-8 that they're gonna *love* because it's a wonderfully versatile all-purpose telescope. Mike, a gifted observer with two A. L. observing pins, is returning to FRAC after a 2-year absence. He was sorely missed, and we're glad he's back.

With the addition of those fine folks, FRAC's membership presently stands at 34: 31 paying membership units (families or individuals) and three honorary members.

*Congratulations to **Curt Cole** for completing his *fifth* A. L. observing program, the Deep-Sky Binocular Club (certificate #247). The DSB is Curt's third observing pin in the past two years, the others being Double Star and Lunar Club. Curt now joins **Larry Higgins** and **Smitty** in being halfway to becoming a Master Observer.

*The Feb. '08 issue of *Astronomy* (pp. 22-26) contains an article, "How Comets Shaped History," written by AAC member **Rich Jakiel**.

Rich, a prolific writer who co-authored (with **Wolfgang Steinicke**) the book *GALAXIES And How to Observe Them* (London: Springer-Verlag, 2007). He also has written dozens of articles for the major astronomy magazines, was a guest speaker at GSV '07 and has spoken at several FRAC meetings in the past. **Larry H.** is trying to

arrange for Rich to speak at an upcoming FRAC meeting.

***A Christmas *Extreme Makeover* (Telescopic Edition) Story.** FRAC member **David O'Keeffe** drives a schoolbus. One day he overheard a 12-yr.-old boy on his bus saying that he hoped to receive a telescope for Christmas. Knowing the boy to be a good student who excels in science, David called Isaiah's mom. She said she knew he wanted a telescope, but, as a Katrina evacuee with limited financial resources, she couldn't spend more than \$100 for a telescope for him. She was planning to buy him an el cheapo 'scope from Toys 'R Us. David sent out an urgent FRACgroups request for suggestions on how to advise her.

Enter **Steve Knight**.

"I have a Celestron 4.5 EQ that was donated to the club a few years ago," Steve wrote. "Until now, I'd forgotten that I had it. It's in good shape, but no eyepieces. Let's pass it on. I'll clean it up, and if **Larry (Higgins)** can whip up a Dob base for it, that would be great. A kid doesn't need to start out in astronomy with a cheap EQ mount, he needs a Dob."

Larry agreed to help, and the finished product is nothing short of stunning. The optical tube is attached to a one-armed Dob base that's of ideal height and weight for a 12-year-old. Larry added a centering dot to the mirror for collimation purposes and a couple of new eyepieces that had come with a new rich field telescope he purchased recently.

Isaiah's mom intends to enroll him in FRAC and bring him to Cox Field where club members can show him how to operate the telescope and find things in the night sky.

David O. bought him some star charts and a basic astronomy book. All of those things won't guarantee that Isaiah will become as devoted to astronomy as **Katie Moore** was, of course – but at least the opportunity is there for him now if he wants to take advantage of it.

The Christmas season is a time for caring and sharing, and by their actions Steve, Larry and David epitomize that concept. Thanks, guys, for underscoring in such a convincing manner the true meaning of the reason for the season.

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Upcoming Events. Our Cox Field observing weekends will be **Fri.-Sat., Jan. 4th-5th** and **Fri.-Sat., Jan. 11th-12th**, with the new moon midway between them.

Our Jan. club meeting will be at **7:30 p.m.** On **Thurs., Jan. 10th**, in the Stuckey Bldg. on the UGa-Griffin campus. Our speaker will be **Larry Higgins**, his topic "Astronomy On a Shoestring." Although well-versed in virtually every aspect of astronomy, Larry is legendary for his economical approaches to observing and building an arsenal of dependable but inexpensive observing tools that do not sacrifice quality or performance.

Specifics of upcoming FRAC observings for (a) a home-schooling group of 50-75 Henry Co. students and parents on **Mon., Jan. 28th** (rainout date: Mon., Feb. 4th) and (b) an as-yet unfinalized Crescent Elementary School in Griffin for late Jan. or early Feb., will be announced via FRACgroups later in the month.

The speaker for our Feb. meeting will be **Steve Bentley**, his topic "Power Sources for Your Telescope."

Hey, folks, take it from one who knows: you *don't* want to miss either of our upcoming programs! They're gonna be first-rate presentations.

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The Sky in January. Jan. will offer excellent possibilities for finding and observing **Mercury** safely. Thirty minutes after sunset between Jan. 19th-26th, look for Mercury as a very bright (mag. -0.9 or thereabouts) star low in the W sky. You aren't likely to see any surface detail – but you *will* see the planet's Moon-like phases because, like **Venus**, Mercury is closer to the Sun than Earth is.

Around the middle of the month, Mercury's tiny disk will be about $\frac{3}{4}$ lit; by Jan. 21st it will have further shrunk to about half-lit – sort of like some of our members after dipping too liberally into the eggnog.

If you're new to astronomy, you may wonder why Mercury and Venus appear round to the naked-eye even when they display phases telescopically. Here's why: *It's an optical illusion.* The planets are so bright that, when we look at them naked-eye, our minds fill in the rest of the disk. That doesn't work with a magnified view because it brings the planets so much closer to us. Telescopes aren't fooled by incomplete planetary disks. (The same applies even more so, incidentally, with the **Moon**, which is so much closer, larger and brighter in our view.)

Mars (mag. -1.5) will be up all night in *Taurus* in Jan. Color filters will enhance observing (e.g., yellow or blue for polar caps and desert regions, red for surface details in large 'scopes). Still, as **Felix** would tell you, slow, careful observing is also a necessity. If you haven't observed the Red Planet before,

Mars probably will be smaller than you expect it to be.

Saturn (mag. 0.4) will rise about 9 p.m. in Jan. Plan to observe those lovely rings now, because they're shrinking in our view. By 2009, they'll be edge-on to us and therefore invisible.

Jupiter and **Venus** will be morning stars in Jan., and just one degree – two **Moon**-widths - - apart on the morning of Jan. 31st.

Comet 8/P Tuttle will be a bright (mag. 6) target during the last week of Dec. and the 1st ten days of Jan. The Jan. issues of *Sky & Tel* and *Astronomy* feature progress charts and info about what to look for in Tuttle.

A very good annual meteor shower, the **Quadrantids**, should put on a good show in a moonless sky this year, offering maybe two meteors per minute at peak about 2:30 a.m. on the morning of Jan. 4th. The *radiant* (i.e., the direction from which the meteors appear to be coming regardless of where they are seen in the sky) will lie in *Bootes* between the head of *Draco* and the handle of the **Big Dipper**.

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COMET HIGGINS-WARREN

An Observing Report Featuring Larry Higgins, Bill Warren and Heather Sherbourne

The first I (**Bill**) knew of the new comet was when I received a phone call from an excited **Larry Higgins** around 7:30 p.m. on Sunday, Dec. 10th. He told me, “Stop whatever you're doing, go outside right now, look above *Cassiopeia*, and call me back and tell me what you see!”

It was easy to see what he was talking about: a small but clearly visible, circular glow that was brighter than **Comet 17P Holmes** had been. Otherwise, it closely resembled that comet's naked-eye appearance.

My 12x50 binoculars enhanced the view and produced an even more striking cometary image. The object had a tiny stellar nucleus within a nebulous glow from which protruded a slender, pronged tail that was about one degree long. The western segment was more sharply defined than the other one.

The phone rang. It was, of course, Larry calling again because I'd forgotten to call him back. He was more excited than I've ever heard him.

"It wasn't there twenty minutes ago," he said when I told him what I was seeing.

A heated discussion ensued as we continued to study the mysterious object. Among other things, we considered contacting CBAT (the Central Bureau for Astronomical Telegrams, operated by the Harvard-Smithsonian Center for Astrophysics as the clearinghouse for reporting suspected astronomical discoveries) to see if any new comets had been reported.

"But it couldn't have been a comet," I protested half-heartedly, trying to remain calm while thoughts of **Comet Higgins-Warren** and lasting world-wide fame danced in my head. "Comets don't show up suddenly with fully formed tails!"

Comet Hale-Bopp was the most widely observed comet of modern times, visible via naked-eye for 18 months in and around 1996. But it had been nothing more than a tailless little "fuzzy star" located somewhere beyond **Jupiter** and speeding toward a rendezvous with the **Sun** when **Dr. Alan Hale** and

Thomas Bopp independently discovered it within minutes of each other at different locations while studying **M70** in *Sagittarius* on July 23, 1995.

Comets don't develop tails until they are close enough to the Sun for solar radiation to sublimate (transform from a solid to a gas) part of the dirty snowball's outer shell, releasing dust and gases and pushing them away from the Sun. Virtually the only way a naked-eye comet with a fully formed tail could show up unannounced would be for it to come from the other side of the Sun.

"Well, this one has a tail!," Larry persisted. "Two of them, as a matter of fact."

Engrossed in preparing my Nobel Prize acceptance speech for having discovered **Comet Warren, the Greatest Comet of All Time!** – Sorry 'bout that, Larry, but I'll forget to mention your name when I call CBAT -- I asked him to repeat himself.

"Well, what is it if it's not a comet?"

"Maybe it's a vapor trail," I suggested weakly. The tail resembled a vapor trail about as much as I resemble **Denzel Washington**.

"Uh-uh, that won't work," Larry countered. "The nucleus is moving too slowly to be an airplane, unless it's some kind of hovercraft."

"It couldn't be a satellite, either, because there's no air up there to produce a vapor trail," I added. And Larry had been watching the whatever-it-was for more than half an hour; unless it was geosynchronous – hey, **Steve Bentley**, I can use big words too! -- a satellite wouldn't remain in view for more than 30 minutes.

"Hey, where's the nucleus?," I asked. The bright stellar nucleus was gone now, and the tail was beginning to fade.

"Beats me," Larry said.

“Sort of like your wife,” I countered angrily. *The nerve of this guy, trying to horn in on my discovery! And now it's vanishing right before my very eyes, like a Nobel Prize written in invisible ink.*

We discussed other options.

Was it a weather balloon? That might have explained the nucleus, glowing in reflected sunlight, but not the vapor trail/tail.

Was it the arrival of the alien invasion starfleet that some religious cult had decided was hiding behind Comet Hale-Bopp in 1996? If so, it was slipping back into its *Star Trek* Klingon warship cloaking device (invisibility) mode.

At one point in our conversation Larry noted that “It's following the north-south orbiting pattern of spy satellites.” The object was moving, albeit slowly enough to remain in view for a total of 50 minutes. Although we didn't follow up that line of reasoning, it turned out to be the most accurate insight that either of us produced.

Meanwhile, in the tiny town of Hamilton, Ga. (pop. 527, located 19 mi. N of Columbus), FRAC member **Heather Sherbourne** had also seen the strange phenomenon, and she too wondered what was going on.

“I was walking out my front door, heading for my daughter's school choir performance. On my way to the car, I glanced up at the sky as I always do. I was looking for Comet Holmes when I noticed a bright patch of sky glowing almost directly above me.”

Although in a hurry to get to the school, Heather rushed back inside to get her binoculars and 6” telescope. “The binocs showed a comet-like object about a degree long, moving NE slowly enough to be tracked

easily in the 'scope. The telescopic view showed two faint stellar points of light on either side of what would have been the head of the 'comet.' That made me think it must be some kind of satellite, so I went back inside and called my friend **Bryan**, who lives in San Antonio and is an expert on satellites.

“I told Bryan what I'd seen. He said he couldn't see it because San Antonio was clouded over, but from my description he knew exactly what I had seen: an hour earlier, Bryan had watched the launch of a spy satellite. 'You're seeing the out-gassing of the Centaur stage,' he said.”

Later, after her daughter's performance, Heather sat down at her computer, typed in www.spaceweather.com and learned that “Skywatchers from England to Florida to Canada” had seen and observed the event, which was first thought to have been a satellite explosion but later was found to be “fuel dumped from the upper stage of an Atlas rocket that launched a classified (*read: spy*) satellite into orbit for the National Reconnaissance Office.” Heather thoughtfully shared that information with her FRAC comrades the next day via FRACgroups.

Larry and I didn't share the fruits of our brilliantly misguided analyses – well, *mine* were, anyway – until now. Still, it speaks well for FRAC that Larry, Heather and other club members observed and tracked the pseudo-comet. It wasn't an event that you were likely to see if, like me, you were indoors watching a Blockbuster movie.

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Ultraviolet Surprise

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400

years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

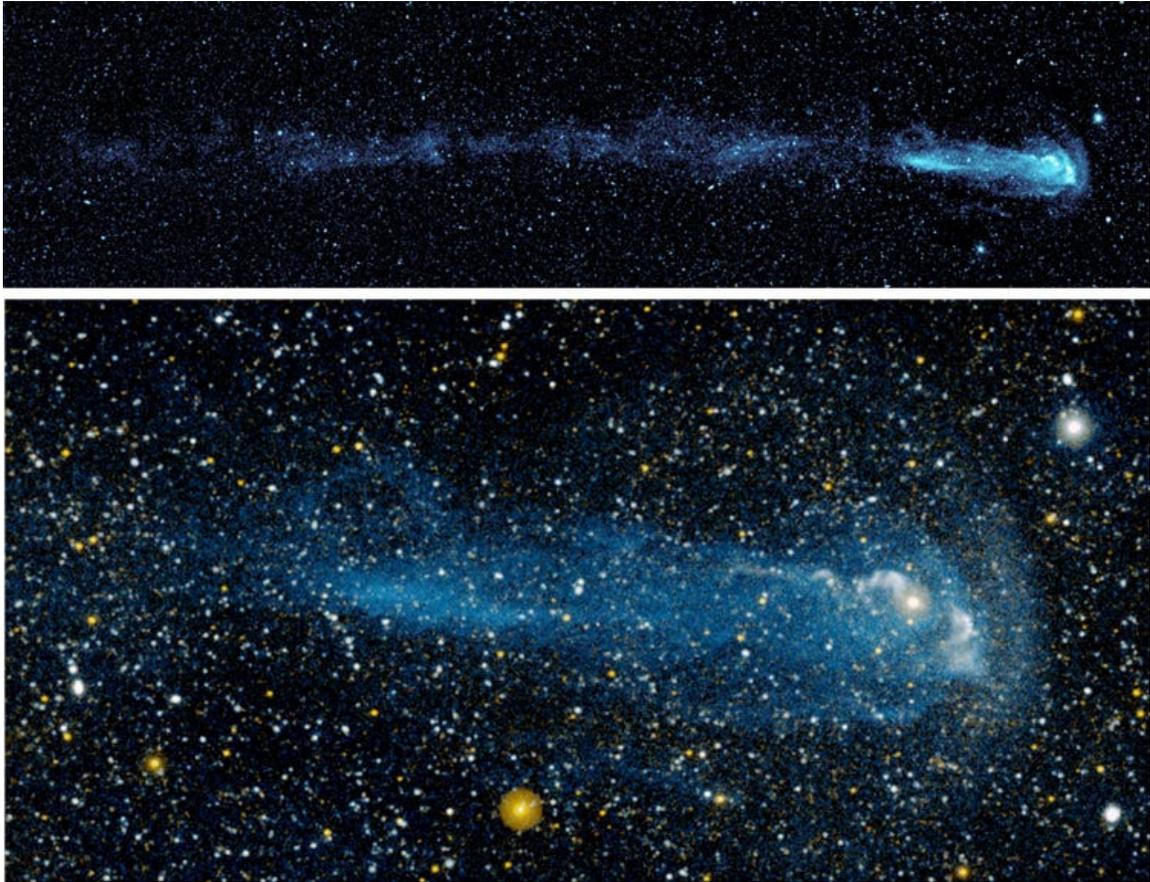
Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Caption:

Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.