

THE FLINT RIVER OBSERVER

Newsletter of the FLINT RIVER ASTRONOMY
CLUB, an Astronomical League affiliate

Vol. 12, No. 12 February, 2009

Officers: President, **Bill Warren:** (770)229-6108,
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Higgins;** Secretary-Treasurer, **Steve Bentley.**

Board of Directors: **Tom Moore; Tom Danei;
Felix Luciano;** and **Charles Anstey.**

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Higgins;** Program Co-Chairmen, **Larry Higgins** and
Bill Warren; NASA Contact, **Felix Luciano;** Event
Photographer, **Tom Danei;** and Newsletter Editor,
Bill Warren.

Club mailing address: 1212 Everee Inn Road,
Griffin, GA 30224. Web page:
www.flintriverastronomy.org; discussion group at
FRAC@yahoogroups.com.

Please notify **Bill Warren** if you have a change of
home address, telephone no. or e-mail address.

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Club Calendar. Thurs., Feb. 12: FRAC Elections/
Birthday Party meeting (7:30 p.m., 2nd floor of the
Stuckey Bldg. on the UGa-Griffin campus); **Fri.-Sat.,
Feb. 20-21:** Cox Field observings (at dark); **Fri.-
Sat., Feb. 27-28:** Cox Field observing (at dark).

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President's Message. It's election time again in
FRAC.

When **Ken Walburn, Larry Higgins** and I started
FRAC twelve years ago, we didn't have a Board of
Directors because there weren't that many members

who wanted to be involved in running the club. But
FRAC has grown – we had 18 charter members in
1997, compared to 43 members today. Better still, we
have a lot more people who want to be more than just
faces in the crowd. Although many of our members
are officer material, here's the slate of officer and
board candidates for 2009 that I presented at the Jan.
meeting:

President: **Bill Warren**

Vice President: **Larry Higgins**

Secretary-Treasurer: **Steve Bentley**

Board of Directors: **Tom Moore, Tom Danei,
Felix Luciano** and **Joel Simmons.**

Unless other nominees arise at the Feb. election
meeting, those gentlemen will run unopposed. If you
want to run for office, you need to let me know as
soon as possible so I can get your name on the
absentee ballots to be sent out on Feb. 1st; otherwise,
the members voting that way won't know you're
planning to run for office, or what office you intend to
run for.

Please note: On Feb. 1st, you'll be sent an
absentee ballot. If you want to vote that way rather
than wait for the Feb. election meeting, please return
your completed ballot to me at
warren7804@bellsouth.net, or c/o **Bill Warren, 1212
Everee Inn Road, Griffin, GA 30224.** Be sure to
send it early enough that I'll receive it prior to the
meeting date, **Feb. 12, 2009.** You don't have to sign
your ballot unless you want to.

Finally, here's a big **WELCOME TO FRAC!!!** to
our newest members, **Richard & Kelly Bragg** of
Hampton. Richard took advantage of the current
economic downturn to work out a monster bargain on
a new 12-in. Zhumell telescope: "\$700+ change for
the 'scope, a Finderscope and free shipping." (I hope
he also remembered to order a few crystal-clear
evenings for observing at Cox Field.)

Anyway, folks, welcome to the club. I think you
already know that all of us are ready and willing to
help you get started on the right foot. (My
contribution will be trying to avoid tripping over your
new 'scope in the dark at Cox Field.)

-Bill Warren

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Last Month's Meeting/Activities. An exceptional crowd of 15 members attended our FRAC meeting on Jan. 8th: **Charles Turner, Jessie Dasher, Kevin Murdock, Olga & Carlos Flores, Betty & Steve Bentley, Beverly & Jerry Williams, Larry Higgins, Dwight Harness, Joel Simmons, Tom Moore, yr. editor** and speaker **Dr. Richard Schmude**. It was a remarkable turnout, considering that, in conducting the meeting at Gordon College, we were making a rare venture away from our home turf at UGa-Griffin. Dr. Schmude talked about The Cove and shatter cones, and as a result we think we might be able to recognize one if we happen to stumble over it on our upcoming club visit to The Cove.

Our Jan. 16th-17th Cox Field observings were clouded out – but nobody minded much because it was the coldest weekend in the past 5 yrs., with temps dipping into the low teens.

Anticipating poor skies on the weekend of the 23rd-24th, **Alan & Vicky Pryor** and **yr. editor** went out to Cox Field on Thurs., Feb. 22nd, and the skies were very cooperative. Alan found **Horsehead Nebula** in *Orion*, and both of us observed some other elusive targets like **M33** and **Trumpler 1** (see **Felix's** observing report on pp. 5-6), among many other celestial delights such as a very pretty bolide (fireball). We stayed out at The Cox until about 11:30 before packing up and heading for home.

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This 'n That. An important reminder: *Your 2009 FRAC dues are up for renewal in February.* You can pay at the Feb. meeting, or send your check for \$15, payable to the **Flint River Astronomy Club**, to:

Steve Bentley
950 Boxankle Road
Forsyth, GA 31029.

As stated in FRAC's Bylaws, you have from now until March 1st to pay your dues in order to remain an actively enrolled member in the club.

*Once a year, the preacher in the church of our childhood had the unhappy task of delivering a

sermon on the necessity of honoring your tithe pledges so that the church's finances would remain solvent. One year, we recall, he took a deep breath, leaned forward and began his sermon: "And now, dear funds..."

So it is in FRAC. We try not to bother you too much about club finances, but sometimes circumstances dictate otherwise.

We have a star party, **Georgia Sky View 2009**, coming up in late April, and Indian Springs State Park, of which Camp McIntosh is a part, has changed the rules on us this year. They now require us to pay the unpaid balance *before* the event. And because this year we'll have a 4-day, 3-night GSV instead of last year's 3-day, 2-night format, we'll owe them an additional \$500. We can pay the remaining balance out of present club funds – but there are other expenses such as purchasing supplies, paying for the tee shirts, etc., that also must be done before the party.

All of this is a roundabout way of saying that *It will really help out the club if you'll give some thought to sending in your registration form and check now, or in the near future, rather than waiting till the last minute to do so.* Your assistance – and your "dear funds" -- will be greatly appreciated.

*We applied in Jan. for a \$2,200 grant from the Central Georgia Electric Membership Corporation Foundation to purchase a laptop and power point projector. We're hoping that, as a charitable organization, the Foundation will recognize our club's need for improving the quality of our library and class astronomy presentations, and approve our grant proposal. We'll let you know, one way or the other, when (or if) we hear from them.

*Here's wishing **Kathy Pillatzki, Dan's** wife, a speedy recovery from a fall recently in which she broke her hip, requiring a titanium implant.

*FRAC is now officially a Partner-In-Education with Orrs Elementary School in Griffin. Rather than providing funds for the school, we'll work with the faculty to provide astronomy experiences such as observings and class presentations.

*Thanks to **Larry Higgins**, we now have a new little red FRAC sign at the intersection of Turner Rd. and Williamson Rd. (Hwy. 392). At least, we *hope* it's still there, the one we had there a few years ago having mysteriously disappeared the same day a real estate sign appeared in its place.

*Several years ago, we started renting "flintriverastronomy.org" e-mail boxes to members for \$5 a year. Due to a lack of interest, we are discontinuing that service as of March 1st, 2009. Any members who are currently using that e-mail address may download their message files at any time prior to that date.

*A personal aside to new members **Richard & Kelly Bragg**: one of amateur astronomy's most enduring traditions involves blaming bad weather on whoever has made the most recent purchase of equipment. (As ex-Atlanta Astronomy Club president **Art Russell** once explained, "Got a new eyepiece or filter you want to try out? *The sky knows you're coming.*")

So you bought a new telescope, huh? Weather forecasters are predicting clear skies and temps above freezing by early April.

*Here's a two-part trivia question for you: How many moons does **Pluto** have, and what (is, are) (its/their) name(s)?

If you don't know the answer to that question – and **yr. editor** didn't, but he does now – you can find it on p. 122 of **Dr. Schmude's** book, *URANUS, NEPTUNE AND PLUTO*. (Or you can find the answer on p. 6 of this newsletter.)

* * *

Upcoming Meetings/Activities. After a road trip to Gordon College for our Jan. meeting, we'll be back in the friendly confines of the Stuckey Bldg. on the UGa-Griffin campus for our Feb. meeting at **7:30 p.m. on Thurs., Feb. 12th**. We won't have a speaker; instead, we'll celebrate FRAC's 12th birthday with a little party after holding elections for officers and board members.

A reminder: in case you can't make it to the Feb. meeting, we'll be sending out absentee ballots – this likely will be the last year we'll use that system for voting – and in order for your vote to count it must be returned to **yrs. truly** prior to the meeting on the 12th. (See p. 1 for details.)

Our two February Cox Field observing will be on **Fri.-Sat., Feb. 20th-21st** and **Fri.-Sat., Feb. 27th-28th**. Both weekends should be ideal, lunarly speaking (did we just invent a new word?), the New Moon coming between those two dates on the 24th.

We may hold some as-yet unscheduled public observings in Feb.; if so, we'll try to let you know several days in advance of each one.

The speaker at our March meeting will be **Doug Maxwell**, who will show and tell us how he built his revolutionary tracking system for his 14" Dobsonian telescope. It's a *very* impressive piece of work by a very talented man, and you *won't* want to miss that meeting.

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People You Should Know: Jerry and Beverly Williams.

Attention **Ken Walburn**, here's your "Deep Thought for the Day": *Good clubs are made up of good people* (or else they wouldn't *be* good clubs.) This Month's "People You Should Know" spotlight focuses on Jerry & Beverly Williams of Fayetteville, Ga., two of FRAC's finest and most likeable members.

New to astronomy and FRAC, Jerry & Beverly use a pair of 7x35 Bushnell binoculars but don't yet have a telescope. They do, however, attend our meetings regularly. (They also visited Wetumpka with the club last October, and, like everyone else, they came away tired but very glad they went.) Their relaxed manner and easy smiles brighten and warm their surroundings like sunshine on a winter day.

The Williamses are retirees, Jerry having worked as a field service engineer for a company that designs and manufactures electro-optical sorting devices (whatever that is).

Jerry later moved into sales, and retired as the national sales manager for the U. S. division of a German manufacturer of vision systems.

Beverly worked with the EPA – and *No, Ken Walburn, that's not* “Elvira’s Party Accessories,” it’s the Environmental Protection Agency. Beverly’s work entailed providing grant funding to communities to clean up and re-develop contaminated properties. (And here one envisions Ken thinking, *So that’s who made me get rid of the outhouse in my backyard!* Well, no, Ken, it was your wife **Doris** who made you tear it down.)

Jerry and Beverly have a married daughter, **Suzanne, 33**, who, with her husband **Alan Carter** have provided J&B with three small grandsons – **Evan (6), Dixon (4) and Grayson (3)**, all of whom they hope to introduce to astronomy when they’re old enough to understand and enjoy it.

Says Jerry, “As beginners, our membership in FRAC has been a tremendous experience for us. The members are extremely friendly and helpful, and they have inspired us to continue to learn about the science of astronomy.”

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The Sky in February. A new, fast-moving comet, **Comet Lulin (C/2007 N3)**, has burst upon the scene. **Larry Higgins** (and possibly other club members as well) has seen it, and says you can see the nucleus via averted vision. Lulin is about mag. 8 now, and is predicted to peak at around mag. 5 or 6 in brightness during the last half of Feb. That’s not nearly as bright as last fall’s **Comet Holmes**, which peaked at mag. 2.8, but Lulin still should hover around naked-eye visibility under dark skies.

Remember the old children’s song, “Rabbit Ain’t Got No Tail at All (Just a Powder Puff)”? Well, that pretty much described Comet Holmes – and it was supposed to be true for Comet Lulin too, except that Lulin has more of a tail than was expected. (It also has a small “anti-tail” that points *toward* the **Sun**, best visible around **Feb. 26th**).

Around **Feb. 15th**, Lulin will be 3° N of mag. 1 **Spica (Alpha Virginis)**, the brightest star in *Virgo* and 15th brightest star in the entire sky. On **Feb. 23rd**, the comet will be 2° SSW of mag. 0.7 **Saturn**, and on the **27th** Lulin will lie within 1° of mag. 1.3 **Regulus**

(**Alpha Leonis**), the bright star that forms the dot in the backward question mark of Leo’s head.

The closest Comet Lulin will come to the Earth will be on **Feb. 24th**, when it reaches a point 38 million miles away. (That’s a few million miles closer to us than **Mars**.)

What does all this mean to us in terms of Cox Field in Feb.? Well, Saturn will be rising around 8 p.m. by then, so Lulin should be an easy binocular or telescopic target on both the **20th-21st** and the **27th-28th**. C’mon out and join us on one or more of those evenings if the skies cooperate; whether Lulin will be your first comet or your 56th, you’ll be impressed. We’ll find it together, discuss what we see, and you’ll get to know a comet, up close and personal.

As long as we’re talking about comets, let’s find out exactly what we’re talking about.

* * *

Comets

article by **Bill Warren**

In the past 15 years, three celestial events have drawn more new participants into astronomy than anything else that has occurred in the night sky – and *all of them involved comets!*

In 1992, **Comet Shoemaker-Levy 9** – it was the 9th comet discovered by the comet-hunting team of **Carolyn & Eugene Shoemaker** and **David Levy** – came close enough to **Jupiter** in the comet’s orbit for the planet’s gravitational pull to rip Shoemaker-Levy 9 into nearly two dozen fragments. On its next orbit of Jupiter two years later, the comet’s fragments plowed into Jupiter, one after another, over a 3-day period in July, 1994, leaving black scars that, for 2 weeks thereafter, were more visible in amateur telescopes than the Great Red Spot.

In 1996, **Comet Hyakutake** came along – it was named after FRAC’s intrepid comet-hunting vice president, **Larry Higgins** (at least that’s what *he* says, adding that “That’s the way they spell Higgins in Japan”) – sporting a 300-million-mile-long tail, more than three times longer than that of any other comet in recorded history.

And in 1995, **Dr. Alan Hale** – *No*, it's not the same Alan Hale who played the Captain of the *S. S. Minnow* on "Gilligan's Island" – and **Thomas Bopp** co-discovered the most widely observed comet in modern times. At its brightest in 1996-97, **Comet Hale-Bopp** reached mag. 2.8 and remained visible to the naked-eye for an incredible *eighteen months!*

Known familiarly as "dirty snowballs" because they consist of frozen gases and dust, most comets originate in an area surrounding the solar system at a distance of 2-5 trillion miles from the **Sun**. This area, known as the **Oort Cloud**, is essentially a garbage dump of material left over from the formation of the solar system.

Every now and then, something manages to disturb that infinite mixture of debris to the extent that a particularly large mass is nudged out of its meanderings. If sufficiently close to the Sun to be attracted by its powerful gravitational influence, the comet begins its long journey through the solar system and toward the Sun. This is where most comets are discovered, since by the time they draw near enough to us and the Sun to attract our attention by growing a tail (see below), most of them will already have been discovered.

In its inward trip toward the Sun, the comet's path is affected by its having to run a gauntlet through the planets and their orbits, with each planet capable of altering the comet's course. (It may help to think of the Sun as a huge magnet, and the planets as smaller, weaker magnets that are held in their orbits by centrifugal force.) As the comet draws nearer to the Sun, eventually it falls prey to the powerful solar wind and X-ray radiation emitted by the Sun. When that occurs (usually while the comet is still hundreds of millions of miles away), portions of the frozen snowball's surface begin to sublime, or "melt," not into a liquid but into gases containing dust. The solar wind creates a gas tail, and radiation pressure on released dust creates a dust tail. Sometimes comets develop multiple tails.

At this point, the comet takes on its familiar features: a bright **nucleus** (the comet's still-frozen heart, usually a few miles in diameter); a cloud-like **coma** of gases surrounding the nucleus; and a bluish

gas tail and brownish **dust tail**, both of which, due to the solar wind and radiation pressure, always face away from the Sun. The gas tail usually is smaller than the dust tail, which, in some cases is pushed by solar radiation into a broad, fan-shaped arc that may extend scores of millions of miles behind the comet. Sometimes, as in the case of **Comet Holmes**, the comet's angle of approach to the Sun hides the tails from our view.

Assuming that the comet doesn't eventually crash into the Sun or have its course rearranged by a close encounter with a planet, it will orbit the Sun and move out again. Where it goes from there depends on a universe of factors. Some comets leave the solar system entirely, never to return. Others, such as **Halley's Comet**, remain in orbit around the Sun. Some of the latter return after intervals of hundreds or even thousands of years, others after briefer intervals. (Halley returns every 76 years.) Every time they return, they release gases and dust from their nuclei.

One other point: while the gases released by cometary passes vanish into the darkness of space, the dust specks remain behind, assuming orbits of their own, independent of the comet. Annual meteor showers such as the August **Perseids**, the November **Leonids** and the December **Geminids** (to cite three examples) are the result of earlier passes by comets that left dust trails behind them. Every time a comet passes sufficiently close to the Earth to leave its debris behind, a meteor shower is created.

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A Belated Observing Report: Felix Luciano

Date/Time: Dec. 19, 2008, 8:30-10:05 p.m.

Location: home.

Observing Conditions: 61° F, light winds, high humidity. Skies mostly clear, some thin cloud cover moving fast, W-E. Some light pollution from nearby parks and shopping centers.

Telescope: Orion Classic XT8 Dob with Telrad, no dew shield.

Eyepieces: 16mm Nagler (75x), 14mm Radian (86x), 6mm Orion Expanse (200x).

1. **M33 (Pinwheel Galaxy)**, a face-on galaxy in *Triangulum*. 75x magnification. Using direct vision, M33 is a faint, small, fuzzy patch of light. Averted vision shows a somewhat brighter, larger patch of light. By gazing at a nearby bright star, the galaxy's outline becomes more pronounced and easier to distinguish. Low surface brightness.

(Editor's Note: Face-on galaxies such as M33 can be difficult to observe because their brightness is spread out over a large area. M33 is listed as being mag. 5.7 in apparent (or visual) brightness, but its surface brightness is much lower than that of a mag. 5.7 star in which the light is concentrated in a single point of light.)

2. **M45 (the Pleiades in Taurus)**. Naked-eye observation. The cluster just cleared the treetops to my east. I was able to see 4 stars using direct vision and 5 stars using averted vision.

3. **M103**, a celestial Christmas tree in *Cassiopeia*. 86x. A bright, large, triangular cluster with 3 bright stars shaping the tree outline and the cluster's other, fainter stars inside it. A spoon-shaped group of stars lies slightly NE of M103: 3 bright stars in a compact triangle forming the spoon, and 2 fainter stars forming the handle and pointing toward M103.

4. **Trumpler 1**, a small open cluster in *Cassiopeia*. 75x, 86x, 200x. This is my "Six of Dominoes" cluster: two rows of bright stars running nearly parallel to each other. The W row is brighter, with 4 stars forming a straight line. The other row is dimmer and needs averted vision to clearly visualize its components.

5. **NGC 663**, an open cluster in *Cassiopeia*. 86x. A large, irregular cluster with 14 brighter stars surrounded by other, fainter members.

6. **NGC 654**, an open cluster in *Cassiopeia*. 86x. A small, faint glow with its 2 brightest stars near the S edge.

7. **NGC 457, the E. T. (or Owl) Cluster** in

Cassiopeia. 86x. A large, elongated cluster with its 2 brightest stars forming E. T.'s (or the owl's) eyes and other stars in the cluster forming the body and arms (or wings).

8. **NGC 436**, an open cluster in *Cassiopeia*. 86x. A small, faint glow located a short distance beyond the "feet" of E. T. or the owl. Averted vision shows a misty, faint patch of light.

9. **M76 (the Little Dumbbell)**, a planetary nebula in *Perseus*. 86x. A small, fuzzy patch of light, elongated NE-SW. Averted vision brings out a little more nebulosity but not much more detail.

10. **NGCs 869 & 884 (the Double Cluster)** in *Perseus*. 86x. Two very bright, large open clusters in the same low-power field of view. 884, the W cluster, is much more irregular than 869, which is more tightly structured and has a group of stars forming a sort of arrowhead shape. The brightest star in 869 lies at the center of the arrowhead.

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The answer to our Trivia question on p. 3: "As of late 2007, **Pluto** had three known moons: **Charon, Nix** and **Hydra** (p. 122)...There is a chance that smaller moons below our detection limit are present (p. 125.)"

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May you go safe today,
With time and stars above, and time and space
below.

-Edward Plunkette, Lord Dunsany

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