

THE FLINT RIVER OBSERVER

Newsletter of the Flint River Astronomy Club
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Club mailing address: 190 West James Circle, Hampton, GA 30228. Web page: <www.flintriverastronomy.org>; discussion group at <FRAC@yahoogroups.com> .

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

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Club Calendar. Thurs., Feb. 8: FRAC meeting (7:30, 2nd floor of Stuckey Bldg. in the UGA Cooperative Extension Griffin Branch complex); **Fri.-Sat., Feb. 16-17:** Cox Field observings (at dark).

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President's Message. I know you'll want to join me in welcoming to FRAC our newest member, **Joel**

Simmons of McDonough. Joel, who attended our Jan. meeting and joined the club that night, doesn't have a telescope yet but hopes to eventually work his way into astrophotography.

On other fronts, that magical time of year is fast approaching: **Feb. 1st**, the day when everyone's membership dues are up for renewal. Please send your \$15 check to **Steve Knight** at his address shown on the other side of this page. In order to continue to receive the *Observer* and vote in the March officer elections, your check (payable to the Flint River Astronomy Club) must be received by Feb. 28th.

Browsing other clubs' web sites, I find that most clubs charge dues of \$25-\$30 annually. Some, such as the Tulsa and Colorado Springs clubs, charge \$35 and more for a family of more than two. So you're getting a real bargain at \$15.

Don't forget, you can get *Sky & Telescope* and *Astronomy* subscriptions through the club at a discount, as well as ordering books through the Astronomical League (also at a discount and with no shipping charges). I hope that you will support FRAC, not just with your continued membership but also by participating to the fullest extent possible in our activities.

-Curt Cole

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Editor's Message. As you'll see – and my old friends already know -- my editorial tone tends to be irreverent – and I'm not above tossing in a few zingers at myself, or at members who don't mind taking an occasional verbal barb. For example, I might point out that FRAC co-founder **Ken Walburn**, who for far too long has deprived us of his presence at meetings and observings, actually drove over from McDonough for the Jan. meeting – but then he turned around and went home because the door was locked. (Sometimes Ken has trouble remembering the subtle differences between Push and Pull.)

Finally, please allow me a personal aside to some of FRAC's veteran members. (Are you listening, **Joe Auriemma? Grady Dukes? Larry Fallin? Joe Morris? Dan Newcombe? Greg Potter? Bill Snyder? Jerry Williams?**) As with Ken Walburn,

we don't see enough of you guys – and that's a shame, too, because each and every one of you is an absolute delight to be around, and our newer members who may not know you yet are missing the opportunity to get to know and appreciate you as much as the rest of us do.

To cite one example (among many that could be given): Every meeting or observing that **Dan Newcombe** misses deprives us all of his incomparable wit, and that's a shame because Dan is one of the funniest guys on the planet. Other equally valid statements could be made concerning all of the guys I mentioned above.

-Bill Warren

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Last Month's Meeting/Activities. We had 16 in attendance at our January meeting, including guests **Joe Simmons** and **James Chiu** and members **Curt & Irene Cole, Smitty, Steve Knight, Doug & Laura Maxwell, Charles, Erica & Jeffrey Anstey, Tom Danei, Larry Higgins, Doyne Tallman, yr. editor** and speaker **Felix Luciano**, who led us through an entertaining and highly informative analysis of equipment and techniques for cleaning eyepieces. And believe it, brethren and sistren, when Felix Luciano talks about eyepieces, every one listens. Felix's collection of Radian and Nagler eyepieces, which require just the sort of TLC that Felix discussed, is second to none.

Doug showed off his latest astronomical toy, a nifty little Celestron Sky Scout. It's the only thing we've seen that's better at identifying stars and other celestial objects than **Phil Sacco**.

Curt offered a fun little quiz, "Name That Constellation," and **Charles** had the most correct answers. **Yr. editor** was the runaway winner in the category of Most Wrong Answers. It takes a special courage to proclaim your ignorance at 140 decibels.

Charles and **Smitty** won \$10 *Sky & Telescope* gift certificates for attendance at observings and meetings.

Curt also recognized **Larry** as FRAC's new observing chairman, **yr. editor** as -- well, your newsletter editor -- and both of them serving as program co-chairmen. (They prefer not to be regarded by the politically correct term *chairs*,

although Larry's I.Q. probably qualifies him for the title.)

In the last two years, no more than 2-3 items have been checked out of our club library; as a result, it was decided that the books will be sold at meetings and at the Ga. Sky View star party.

On Sat. morning, Jan. 20th, 13 members – **Larry Higgins, Charles, Lisa, Erica** and **Jeffrey Anstey, Joel Simmons, Doug & Laura Maxwell, Curt & Irene Cole, Smitty, Tom Danei** and **yr. humble editor** -- gathered at the Star Instruments facility in Newnan for a tour of the plant. Owner **Paul Jones** took us around the plant and showed us how he and Larry H. (his only full-time employee) go about the task of grinding, polishing and testing mirror blanks for Richey-Chretien telescopes. The largest mirror they were currently working on is for a 40-in. 'scope.

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Upcoming Meetings/Activities. Our February FRAC meeting will be held at 7:30 on **Thurs., Feb. 8th**, in the Stuckey Bldg. **Yr. editor** will be the speaker, his topic "Everything You Always Wanted to Know About Deep-Sky Objects."

Our Cox Field observings will be confined to the weekend of **Fri.-Sat., Feb. 16th-17th**, with the New Moon on the 17th.

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This 'n That. **Comet McNaught (C/2006 P1)**, a naked-eye comet with a bright coma and short tail that brought to mind 1997's blockbuster **Comet Hale-Bopp (C1995 01)**, was prominent at dawn and shortly after sunset in mid-January. **David O'Keeffe** and daughter **Sarah** were the first in FRAC to report seeing McNaught hovering above the horizon as it neared completion of the first half of its trek around the Sun. Others who reported spotting the comet included **Jerry Williams** and **Larry Higgins**.

*Ending debate as to whether club members should pay higher annual dues in order to receive *The FRAC Observer* via hard copy, members voted unanimously at the Jan. meeting to keep dues the same and send out

all copies of the newsletter via e-mail. This measure, which will go into effect with the March, 2007, edition, was taken in order to help reduce rising club expenses.

As is presently the case, *The Observer* will continue to be sent out two days prior to our monthly meetings. ***If you do not receive yours on the 2nd Tuesday of the month – or if, as happened to one member recently, your e-mail is down on that date – please contact Bill Warren promptly at (770)229-6108.***

We apologize for any inconveniences this may cause. We aren't trying to punish members like **yr. editor**, whose computer is powered by a hamster on a treadmill; you need your newsletter, and we'll get it to you one way or another, by dogsled if necessary -- or maybe even by having **Steve K.** warble it to you over the phone like a singing telegram -- if you'll just notify us that you haven't received it.

FRAC has a great web site – have we thanked you lately, **David Ward?** – but for those who, for whatever reason, cannot attend meetings or observings as regularly as you'd like, the newsletter is your lifeline to the club, your way of keeping up with what's going on in FRAC. We take that responsibility seriously, and we value your membership highly. You deserve our best efforts to meet your needs in FRAC.

*From the March, 1998, issue of *The Observer*: “FRAC is now one year old and doing fine, thanks. We now have 36 membership units (e.g., families) totaling 73 people – a far cry from the 8-10 members **Bill (Warren), Ken Walburn** and I envisioned at our organizational meeting in February, 1997.” -**Larry Higgins.**

In May, 2002, **David, Sarah & Brendon O'Keeffe** became FRAC's 55th membership unit, a high-water mark during **Steve Knight's** early presidency that has not been equaled before or since. **Curt** is working very hard at getting the word out about the club via the *Atlanta Journal-Constitution* and other newspapers and broadcast media, and by distributing flyers. **Larry H.** has contacted the *Griffin Daily News* about including our meeting dates in their community calendar section.

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Member profile: David O'Keeffe. David is a long-time resident of Hampton, Ga. He is married, and his wife **Cherrie**, children (**Sarah**, 11, and stepson **Jeffery**, 21), and his brother **Brendon** – remember Brendon? -- all have some interest in astronomy.

David is a schoolbus driver during the day; by night, he hauls out his 12.5" Discovery Dob for stargazing. David got his first 'scope, a Tasco refractor, when he was ten. His particular interest in astronomy is the cosmological question, *How was the universe created?*

David has always excelled at FRAC's public observings; he was especially impressive at a Cub Scout observing last year, his enjoyment at teaching the kids and showing them the night sky evident throughout.

Beyond astronomy, David is also an avid fisherman.

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The Sky In February. **Mercury** will be visible, located 6 degrees to the lower right of bright **Venus** in the W sky shortly after sunset during the first two weeks of Feb. Initially bright at mag. -0.8, Mercury will drop lower in the sky and fade until it vanishes shortly after Valentine's Day.

Venus, by far the brightest of the planets at mag. -3.9, will be prominent in the W sky, beginning at twilight.

On **Tues., Feb. 6th**, mag. 5.8 **Uranus** will be a tiny blue-green disk near Venus, and on the following evening it will lie ¾ degree N of Venus.

Jupiter and **Mars** will be morning stars in Feb. **Neptune** won't show up at all. **Pluto** doesn't matter, because some Europeans, prominent in the International Astronomical Union (IAU) and jealous because we're better at astronomy than they are, pushed through a resolution that relegated **Clyde Tombaugh's** discovery to essentially that of an asteroid.

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The Chinese New Year

article by Curt Cole

According to the rule of the T'ai-ch'u Era (104 B.C.) of the **Emperor Wu Ti**, the Chinese New Year is the second new moon after the winter solstice. In Vietnam, it is known as Tet Nguyen Dan, or just Tet. In China and Vietnam, the seasons are centered on the solstices and equinoxes, rather than beginning and ending on them as in Western cultures. So Chinese New Year, also known as Lunar New Year, and Tet mark the beginning of Spring. The new year will be celebrated this year on Feb. 18. It will be the year of the Pig (Boar).

On New Year's Eve, homes are swept clean to sweep away bad luck and make room for good luck to arrive. The broom and dustpan are then stored away so good luck is not accidentally swept away after it arrives. Firecrackers are used to scare away evil spirits. Like Georgia's politicians, many governments in Asia have banned the public sale and use of fireworks, so government displays take their place.

A popular Vietnamese folk tale concerns two lovers who haven't lived up to their responsibilities. As a result the king, as punishment, puts them on opposite sides of a wide river. The only time they might be able to reunite is when the raven builds a bridge across the river, and this only happens once a year. The young lovers are so distraught that they cry an enormous volume of tears, which fall as rain.

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The Fine Art of Drawing Nebulae: Part One

article by Rich Jakiel

(Editor's Note: This article has appeared in the Focal Point (AAC's newsletter), and in Tom Clark's Amateur Astronomy magazine as well as the September and November, 1998, issues of The Observer. It also appeared in revised and expanded form in Astronomy Magazine. Sixty-five of Rich's drawings were included in Kepple & Sanner's

remarkable deep-sky observer's bible, Night Sky Observer's Guide.")

While doing research, I love spending time browsing through mid-to-late 19th-century astronomical journals. They often contain plates of drawings of various deep-sky objects, and many of them are so precisely drawn that it's easy to recognize the object without referring to the accompanying text. The drawings of spiral nebulae by **William Parsons (Lord Rosse)**, **Lassell's** sketches of the **Orion Nebula** and **Trouvelot's** illustrations of globular clusters are beautiful and timeless. How did they execute such exquisite deep-sky vistas? As the old saying goes, It really isn't as hard as it looks.

Drawing is a form of self-expression in which the mind, eye and hand work together to produce a record of visual impressions. In carefully examining those old plates, it's not difficult to sense what the observer experienced as he executed his drawing. Though astrophotography and CCD imaging are now the media of choice for the accurate recording of details, drawing is still the best means to record the observer's visual impressions. Unlike other forms of astro-imaging, drawing is an inexpensive means to make a permanent record of your observations.

As you execute a drawing, you will also refine your observing skills. The process isn't instantaneous, though; you must spend time focused on a particular object. While some objects may require only a few minutes, others such as large, complex **M17** may take one or two hours of telescope time.

Tools of the Trade. One of the most important steps is to make a good field drawing, or rough sketch of the object, while observing. Making a black-on-white, or "negative," drawing is by far the easiest kind. It needs not be a masterpiece but rather an accurate record of what you saw. You'll make notes and sketch out the fine details; afterward, you can make the finished drawing at home.

To make a good field drawing, you'll need the following equipment: paper, clipboard, red flashlight (variable intensity preferred), pencils and a good eraser. The paper should be a clean, unlined, white,

medium-weight variety. I often use good copy paper for my field work. Spiral bound sketchpads are also an excellent means to keep your field work together in one place.

The eraser is your friend. You can actually draw with an eraser, and make fine details including mottling of nebulae or dark lanes in galaxies. The best eraser for the job is the soft, pliable art gum variety found in art supply stores. Costing less than a dollar, they can be molded into any shape you wish; I often form a point and “draw” (erase) in delicate details. You should try to avoid using erasers on the end of #2 pencils: they have harsh abrasives and can destroy the texture of the paper if used too liberally.

When it comes to pencils, not all are created equal. You will quickly find out that, to get a good, solid **black** you will need either layout or charcoal pencils. This isn't critical in making field drawings, but for good finished astrodrawings you will need the full range of values that these pencils can provide.

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A Great Big Wreck

by Dr. Tony Phillips

People worry about asteroids. Being hit by a space rock can really ruin your day. But that's nothing. How would you like to be hit by a whole galaxy?

It could happen. Astronomers have long known that the Andromeda Galaxy is on a collision course with the Milky Way. In about 3 billion years, the two great star systems will crash together. Earth will be in the middle of the biggest wreck in our part of the Universe.

Astronomer John Hibbard isn't worried. “Galaxy collisions aren't so bad,” he says. A typical spiral galaxy contains a hundred billion stars, yet when two such behemoths run into each other “very few stars collide. The stars are like pinpricks with lots of space between them. The chance of a direct hit, star vs. star, is very low.”

Hibbard knows because he studies colliding galaxies, particularly a nearby pair called the Antennae. “The two galaxies of the Antennae system are about the same size and type as Andromeda and the Milky Way.” He believes that the Antennae are giving us a preview of what's going to happen to our own galaxy.

The Antennae get their name from two vast streamers of stars that resemble the feelers on top of an insect's head. These streamers, called “tidal tails,” are created by gravitational forces—one galaxy pulling stars from the other. The tails appear to be scenes of incredible violence.

But looks can be deceiving: “Actually, the tails are quiet places,” says Hibbard. “They're the peaceful suburbs of the Antennae.” He came to this conclusion using data from GALEX, an ultraviolet space telescope launched by NASA in 2003.

The true violence of colliding galaxies is star formation. While individual stars rarely collide, vast interstellar clouds of gas *do* smash together. These clouds collapse. Gravity pulls the infalling gas into denser knots until, finally, new stars are born. Young stars are difficult to be around. They emit intensely unpleasant radiation and tend to “go supernova.”

GALEX can pinpoint hot young stars by the UV radiation they emit and, in combination with other data, measure the rate of star birth. “Surprisingly,” Hibbard says, “star formation rates are low in the tidal tails, several times lower than what we experience here in the Milky Way.” The merging cores of the Antennae, on the other hand, are sizzling with new stars, ready to explode.

So what should you do when *your* galaxy collides? A tip from GALEX: head for the tails.

To see more GALEX images, visit www.galex.caltech.edu. Kids can read about galaxies and how a telescope can be a time machine at spaceplace.nasa.gov/en/educators/galex_puzzles.pdf.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology,

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Caption:

This GALEX UV image of the colliding Antennae Galaxies shows areas of active star formation, which is not in the tidal tails as one might expect.