

THE FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT RIVER
ASTRONOMY CLUB
An Affiliate of the Astronomical League

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Club mailing address: 1212 Everee Inn Rd., 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. Fri.-Sat., Aug. 22-23: Cox Field observings (at dark); **Fri.-Sat., Aug. 29-30:** Cox Field observings (at dark); **Thurs., Sept. 11:** Club meeting, 7:30 p.m. (Stuckey Bldg., UGa-Griffin campus); **Fri.-Sat., Sept. 26-27:** Cox Field observings (at dark).

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President's Message. Wetumpka is a sleepy little town straddling the Coosa River in central Alabama, 12 mi. north of Montgomery. About 83 million years

ago, a massive meteor about 1,100 ft. in diameter – that's more than 1/5 of a mile, folks, an asteroid two city blocks wide! --slammed into the shallow sea that covered the Wetumpka area during the Late Cretaceous period when dinosaurs still roamed the earth. The impact of that awesome blast created a 4-1/2 mile-wide, U-shaped crater that can still be seen.

Time and the relentless forces of nature have further changed the area since then. The sea has receded about 150 miles to the Gulf of Mexico's present boundaries. The virgin forests that sprang up on the dry sea bottom have in many cases been further modified by man into roads, farms, towns and cities. U. S. Hwy. 231 actually climbs the western rim of the crater. Inside the crater, on all sides you see forests, roads and the homes of Wetumpka residents.

So great were the changes that have taken place at Wetumpka during the past 83 million years that it wasn't until 1998 that geologists were able to prove conclusively that the landform at Wetumpka was indeed an impact crater formed by a huge meteor that crashed into the sea that covered the area. Their proof came in the form of core samples obtained from two wells drilled on the site by Auburn geologists: those samples contained *shocked quartz*, a substance which is formed only by explosions of the magnitude of a meteor impact.

The Wetumpka Chamber of Commerce conducts annual guided tours of the area each February. **Larry Higgins, Dr. Richard Schmude** and I took the tour last Feb., and we were blown away (pun intended) by what we saw.

For days afterward, practically all I could think of was the awesome power that natural forces such as the Wetumpka meteor can generate. As I told **Steve Knight** recently, it's one thing to read in a brochure that "The Wetumpka explosion was 175,000 times more powerful than the bomb that destroyed the Japanese cities of Hiroshima and Nagasaki in Aug., 1945"; it's something else entirely to see for yourself what a sudden, cataclysmic blast 83 million years ago did to the area where you're standing or driving around.

FRAC will visit the site where "The Star Fell On Alabama" sometime in mid-October. (At writing, details were still being arranged.) We'll carpool to

save on gas costs, and it'll be a day trip. We hope you'll be able to join us for what promises to be an unforgettable experience.

-Bill Warren

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Last Month's Meeting/Activities. We had nine members – **Joel Simmons, Alan & Vicky Pryor, Dwight Harness, Carlos & Olga Flores, Charles Turner, Felix Luciano** and yr. editor – and visitor **Patsy Lwowski** at our Aug. 1st Cox Field observing. Alan was trying out his lovely new 20-in. Obsession Dob, Felix his incredible new 5.1-in. Takahashi 130S refractor, and they didn't charge admission for us to see **M51** in Alan's 'scope or **Jupiter** in Felix's. (Perhaps they should have, the views were that good.)

After everyone else left around 2 a.m., Dwight and yr. editor remained another half-hour, chatting and solving the universe's mysteries. During that time we saw not one, but *two*, lovely bolides (fireballs), both of which exploded silently in fireworks fashion at the end of their brief encounters with Earth's atmosphere. They were sporadic meteors, not early Perseids arrivals.

The following evening's Cox Field observing was stormed out, to the chagrin of **Charles Turner, Larry Higgins, Phil Sacco**, AAC member **Art Zorka**, and yrs. truly, all of whom took a chance that the clouds would stay away but they didn't. As **Joel Simmons** (who wisely stayed home) put it, "It's all **Alan (Pryor)**'s and **Felix (Luciano)**'s fault: Considering their new equipment, we're fortunate we didn't have a hurricane pass through."

For awhile that evening, that's exactly what we thought we had.

Seventeen members and two visitors attended our August meeting: members **Steve & Betty Bentley, Curt & Irene Cole, Jessie Dasher, Joel Simmons, Mike Stuart, Dwight Harness, Ken Walburn, Charles, Erica & Jeffrey Anstey, Charles Turner, Larry Higgins, Felix Luciano, Patsy Lwowski** (our newest member), yr. editor and visitors **Nick & Jennifer Webb** (brother & sister, not husband & wife). We voted unanimously to join the International

Dark Sky Assn. (IDA) at the club rate of \$50 for a year's membership, after which Larry Higgins and yr. editor had the assemblage fanning themselves against the hot air generated by their talk.

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This 'n That. We want to offer a loud "*Welcome to FRAC!!!*" to our newest members, **Patsy & Louis Lwowski**, of Griffin. We haven't had the pleasure of meeting Louis yet, but Patsy has attended two meetings and a Cox Field observing.

*From our "**Better Late Than Never**" Dept.: We had seven members at our June 25th Cox Field observing: **Tom Moore, Alan & Vicky Pryor, Jessie & Alex Dasher; Carlos Flores;** and yr. editor.

*Now that things have slowed down a tad, we're putting more articles from previous issues of *The FRAC Observer* on our website. This month's installments are: "Seeing and Transparency," from the Apr. 2000 issue; "Basic Observing Terms," an expanded version of material from the Feb. 2001 issue; "Measuring Time and Movement in the Night Sky," from the Feb. '02 issue (all of the aforementioned by **Bill Warren**); and **Smitty's** classic guide to preparing for summertime observing, "Attack of the Martian Mosquitos," that first appeared in the May '97 issue.

You'll find these and other articles in the "Articles" section of the website.

Our goal here is, of course, to give you instant access to important articles from past issues of the *Observer* that can expand your understanding of astronomy and help you become a better observer.

You can also find past issues of the newsletter dating back to Dec., 2003 on our website by clicking on the "Newsletters" link. Our goals in every issue are, have been and will continue to be accomplishing three socially acceptable "N-word" goals: "N-form," "N-tertain," and "N-lighten."

*Speaking of our website: Doesn't our new club logo on the front page and elsewhere look good? Designated as "#7", it was the one selected at our July

meeting from a large batch of entries submitted by **Ken Walburn**. Thanks, Ken, for all of your hard work on the logo project – and thanks, **Tom Moore**, for all you’ve done to improve and update the website in recent months. It looks *great!!!*

*Ever on the lookout for a good bargain on the club’s behalf, **Steve Bentley** is ordering 30 *Astronomy* 2009 calendars to be sold at the low, low price of \$10 apiece – that’s \$2.50 less than last year – with the proceeds of sales going to the club treasury, not to Steve.

These calendars are first-rate – **yr. editor** has used them for years, paying a full 1/3 more for them before Steve began selling them last year at a cut-rate price. They make great – and inexpensive – Christmas gifts for your in-laws and out-laws. Steve will have calendars available for sale at our club meetings, or you can mail your check made out to “Steve Bentley” (not to FRAC) at 905 Boxankle Road, Forsyth, GA 31029. The calendars cost \$10 apiece, no tax added.

***Another FRACster Makes the Big Time.** Congratulations to **Carlos Flores**, the fifth and latest FRAC member to achieve national recognition in amateur astronomy. As part of the National Air and Space Museum (NASM)’s “First Light Program,” three astrophotos taken by Carlos are on display at the NASM in Washington, D.C., throughout August, and on its website as well. You can see the results of Carlos’s labors of love at: <http://www.nasm.si.edu/exploretheuniverse/firstlight/feature/cfm?ID=101>.

His three photos are: “Lunar Eclipse”; “Jupiter and the Milky Way on a Cloudy Night”; and “Jupiter, Venus and the Balancing Moon”.

Says Carlos, “If I hadn’t joined FRAC, I wouldn’t have known about the First Light Program. I want to thank **Tom Moore** and his daughter **Katie**, who provided me with information about the program. Katie led my wife **Olga** and me on a tour of the Museum during our visit to Washington last May.”

***Felix and the Great Rift.** Not everything in the night sky is best seen in a telescope, or even in

binoculars. For example, the cloud-like **Milky Way** stretches all the way across the summer sky from *Sagittarius* in the S to beyond *Cassiopeia* in the N. Telescopes and binoculars will resolve relatively small portions of the Milky Way at a time, but to truly appreciate its size and grandeur, naked-eye viewing is best.

Felix Luciano was reminded of a portion of the Milky Way known as **The Great Rift** recently, courtesy of a photo that appeared on p. 21 of the July ’08 issue of *Astronomy*. He’d seen the Rift before, of course: its dark shape amid the bright cloud of the Milky Way is immediately apparent and easy to see in the S portion of *Cygnus*. So Felix went back to it at Cox Field, and he took **Dwight Harness** and **yr. editor** along for the ride. It was an interesting side-trip from our usual observing pursuits.

The Great Rift is, as mentioned earlier, a dark area within the Milky Way’s elongated cloud. Its darkness seems to divide the cloud into two separate entities in the area between *Cygnus* and *Sagittarius*, but that’s not really the case. The Rift is actually a succession of large, overlapping clouds of interstellar dust along the equatorial plane of the Milky Way. In this case, it’s not what you see, but rather what you *don’t* see that matters: the dust obscures everything that lies beyond it.

At any rate, darkness defines The Great Rift. It’s not a place where you’d want to put down roots and live there, but we enjoyed our brief visit.

Thanks, Felix!

*From ex-FRACster **Scott Hammonds**, a superlative astrophotographer and really nice guy who moved out-of-state a few years ago: “Bill, I still follow the FRAC yahoo group even though I live in Florida now. You and **Felix** and a few others were so nice to me when I was getting started in astronomy, and I appreciated that very much. Your words about Felix were well written. I would add that Felix is such a nice guy, a true gentleman as well.

“By the way, I joined (a large astronomy club where I live), but was very disappointed by the lack of outreach and friendliness at that club. NOTHING at all like FRAC.”

*Have you seen the new Sky-Watcher 8", 10" and 12" truss-tube Dobbs? (A photo appears on p. 19 of the Sept. issue of *Sky & Tel.*) They feature a one-piece OTA that expands for use and collapses for transport or storage on guide rods that form the supporting struts without having to be taken apart. The two halves of the OTA lock in place in either position.

Maybe it is and maybe it ain't the next great advance in truss-tube design – that's not for us to say, and Sky-Watcher isn't exactly a household name in truss-tube telescopes like Starmaster, Obsession and Meade Lightbridge. But there was a time not so long ago when those firms weren't so well-known for their truss-tube 'scopes, either. And the Sky-Watchers *are* affordable: the 8" goes for \$495, the 10" for \$695 and the 12" for \$995.

Sky and Telescope* also notes (July, '08, p. 16) that poor **Pluto is undergoing further indignities: the IAU is now referring to Pluto and other dwarf planets beyond **Neptune** as "*plutoids*." Critics are complaining, "Enough already! Hasn't Pluto suffered enough without being referred to as something that sounds like a painful lower body condition?"

***Joel Simmons** and **yr. editor** were talking recently about how long it takes a spacecraft to reach **Mars** from Earth. Joel said "about six months," yr. editor "several years." After all, Mars varies from 36 million to 250 million miles from Earth.

Joel was, of course, much closer to the truth: it took NASA's Phoenix lander 9-1/2 months to make the trip.

It took yr. editor 66 years to reach his present level of ignorance.

"**Twinkle, twinkle, little star.**" Here's a little trivia question for you: *Why don't planets twinkle?* After all, the planets we can see naked-eye (**Mercury, Venus, Mars, Jupiter** and **Saturn**) are about as small in our view as the stars we see. So why don't they twinkle, too? (Answer on p. 6.)

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Upcoming Meetings/Activities. We'll finish up Aug. with Cox Field observations on **Fri.-Sat., Aug. 22nd-23rd**, and again on **Fri.-Sat., Aug. 29th-30th**. The new moon is on the 30th. (Remember, too, that the 30th is the date of our eatin' observing. Come at 5:30, bring along a food or drink item, and overeat until dark when the observing portion begins.)

The speaker at our club meeting at **7:30 p.m. on Thurs., Sept. 11th**, in the Stuckey Bldg. on the UGa-Griffin campus will be **Dr. Richard Schmude**, his topic "The Wetumpka Meteor Crater." It'll be a truly fascinating evening, offering a wonderful preview of the delights in store for you during our October visit to the crater site.

Miss your boss's son's bar mitzvah if need be, but *don't* miss Richard's talk on Wetumpka.

After that, our next Cox Field weekends will be **Fri.-Sat., Sept. 26th-27th**, and again on **Fri.-Sat., Oct. 3rd-4th**. (The **Moon**, which is widely known for such antics, is the culprit here, altering the dates around which New Moons make deep-sky observing possible.)

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Having Fun at Cox Field

observing report by Alan Pryor

I decided to go out to Cox Field late Fri. night, Aug. 8th, because the sky was just too clear to pass up. Due to other obligations, I didn't get there until 10 p.m.

The **Moon** went behind the trees around midnight, and set by 12:30 p.m. By 1 a.m., the skies were very dark and very clear.

I was anxious to see the spiral arms in **M51 (Whirlpool Galaxy)**. I definitely saw its large disk and companion galaxy **NGC 5195**, and I thought I saw the arms a couple of times, but only for an instant before they blended into the disk. It was still a good view, even though M51 was low in the sky.

Jupiter looked good, but I didn't look at it until it was nearly time for me to go. At 360x, I was beyond the limit of the sky tonight, although a week earlier 360x worked great until clouds shut me down.

The **Great Cluster (M13)** in *Hercules* and **M57 (Ring Nebula)** in *Lyra* were fantastic. I looked for the central star in M57, but could not see it. The globular cluster **M22** and **Andromeda Galaxy (M31)** were also impressive.

However, the real fun began when I turned the 'scope to *Scorpius* and *Sagittarius*. I scanned that region of the sky and the Milky Way from the south to zenith. I took in **M20 (Trifid Nebula)**, **M8 (Lagoon Nebula)** and several other bright nebulas, but didn't know which ones they were. I lost count of the open clusters and globular clusters I saw. And I saw three meteors and a satellite that came into my field of view while I was at 100x at about 1:30 a.m. The satellite was relatively faint and moving fast against the background of stars. I managed to track it with my telescope for about a minute, but it finally got away from me.

All in all, it was a fantastic night, incredibly dark and clear. The sky was so rich that I finally just put 100x on the 'scope and started sweeping the region with it. There were a lot of surprises. I stayed out until about 2:30 a.m. before packing it in.

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LARRY HIGGINS: Astronomy's (and FRAC's) Thomas Edison

humor by Bill Warren

FRAC co-founder and vice president **Larry Higgins** is known far and wide for his money-saving ideas and home-made equipment to enhance observing without running up huge debts in the process. Larry's "Astronomy On a Shoestring" presentation rates among the most popular programs in club history.

Here, for the first time, the *Observer* offers insights into three of Larry's less-heralded accomplishments:

***The LarryLight.** Tired of having to replace dead batteries in his red-beam flashlight in the dark at Cox Field, Larry came up with a clever and inexpensive alternative to traditional battery power: *lightning bugs*.

He calls his invention the "LarryLight." *How has the LarryLight worked so far?*, he was asked.

"Pretty good," Larry replied. "The little buggers blink on and off, but if you use about a thousand at a time, they give off plenty of light."

And how does one go about catching a thousand fireflies?

"I attract male lightning bugs by dressing up as a female firefly and running around my backyard, striking matches as I go. The neighbors think I'm crazy, but to male lightning bugs I'm the world's largest Playbug model!

"But that's the easy part," Larry confessed. "The hard part is painting each one with nail polish so it'll blink red."

*During a recent windy evening of backyard observing, Larry discovered that he'd run out of bug spray. Rather than waste valuable observing time on a trip to Wal-Mart, Larry did what he does best: *innovate*. He soaked a rag in kerosene and applied it liberally to the exposed areas of his body.

Then he paused in the wind to light a match for another cigarette...

It's not that Larry is accident-prone, or anything like that, but he's the only person in FRAC who has 911 on speed-dial.

*Although most people aren't aware of it, it was Larry Higgins who pioneered the use of a green laser pointer as a Telrad on his telescope. Unfortunately, in attaching it to his 'scope in the dark at Cox Field, he put it on backward.

Later, after treatment for eye injuries in the hospital emergency room, Larry returned to Cox Field and reversed the pointer to aim outward. He reports that the laser pointer enabled him to find **Stephan's Quintet**, a compact group of five tiny, faint galaxies in *Pegasus*, in record time.

FAA officials are still searching for clues as to why three planes went down in the Griffin area that night in a single five-minute span.

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The Sky In September. Bright **Jupiter** (mag. -2.4) is up all night. So are **Uranus** (mag. 5.7) and **Neptune** (mag. 7.8), their disks tiny but unmistakably blue-green and blue, respectively.

Uranus, by two magnitudes the brighter of the two, is an easy binocular find. Both are clearly nonstellar in telescopes larger than 3" at medium to high magnifications.

We'll give you three reasons why you should hunt them down in September: First, of course, for the bragging point of being able to say you've seen them at all. (Surprisingly, many amateur astronomers haven't done so.) Second, in a hobby where most of what you see except stars is grayish, Uranus and Neptune (and **Mars**) are three tiny islands of color amid the seas of darkness around them. And third, it's nice to know that such loveliness can be seen at all, given their immense distances from us. (Uranus is 1.6 billion miles from Earth, Neptune 4.3 billion miles.)

In Sept., Uranus lies 3° to 4° NE of 4th-mag. **Phi Aquarii**. Neptune lies in an area of *Capricornus* that contains numerous stars of similar brightness, but the text of the Sept. *Astronomy* (p. 46) and an article and charts in the same issue (p. 61) will show and tell you how to locate both Uranus and Neptune.

If you have good horizons to your W, you may see a trio of planets – **Mars, Venus and Mercury** – lumped together within 4° of each other in September, 30 min. after sunset. Provided you can see them at all above the horizon, Venus (mag. -3.8) will be the bright star low in the W sky, Mercury (mag. 0.0, equal in brightness to **Arcturus**), and Mars (mag. 1.7).

Saturn (mag. 0.9) will be a morning star low in the E sky during the last half of September.

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The Brightness of the Moon

article by Phil Sacco

(Reprinted from the June, 1998 issue of The Observer. -Ed.)

If you haven't taken the opportunity to introduce yourself to the **Moon**, then by all means do so! The Moon is the one object other than our **Sun** which is virtually unaffected by light pollution. Any area of the Moon offers far more visual detail than any galaxy...

When you gaze at the brilliance of the full Moon, you probably marvel at its great snowy white countenance. But the Moon isn't white; in fact, it is one of the darkest objects in the solar system and only appears white because there is nothing to compare it to. (This is an optical illusion not unlike the greater apparent size of the Moon when it lies close to the horizon as opposed to when it lies overhead: it appears smaller when overhead because you don't have anything to compare it to directly.)

The amount of sunlight an object reflects back is known as its **albedo** (al BEED oh). Whereas the Moon's albedo is a paltry 7% to 12%, Earth's albedo is more along the lines of 37%; that is, Earth reflects back into space about 37% of the sunlight that strikes it. Thanks to its thick layer of clouds, the albedo of **Venus** is fully 65%, while **Mercury** is similar to the Moon with an albedo of about 15%.

Soil samples brought back from the Moon turned out to be a very dark gray-brown, and so dark that in some cases they almost resembled charcoal. So next time you look at the Moon, just remember that its white, shining orb is actually a *very* dark gray shining orb.

Answer to Trivia Question on p. 3: Stars twinkle because we see them as tiny points of light, and when pockets of moving air pass between us and a star, the light bends slightly and momentarily, creating a twinkling effect.

The **Sun, Moon** and planets, however, are closer to us, and the reflected sunlight that allows us to see them at all causes them to be seen as disks, and not as points of light.

Sometimes planets twinkle, too, though, when seen through turbulent air near the horizon, due to the increased atmosphere the light has to travel through to reach us.

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