THE FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT RIVER ASTRONOMY CLUB

An Affiliate of the Astronomical League

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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., Nov. 5-6: Cox Field observings (at dark); **Thurs., Nov. 11:** FRAC meeting (7:30 p.m., Room 305, Flint Bldg. on the UGa-Griffin campus); **Thurs., Nov. 18:** Science Night observing (6-7:30 p.m., Hubbard Middle School, Forsyth, Ga.); **Fri., Nov. 19:** UGa-Griffin lunar observing (7-10 p.m., UGa-Griffin campus).

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President's Message. "The more things change," wrote the French philosopher **LaRochefoucald**, "the more they stay the same."

Sound confusing? Consider: every time astronomers find an answer to a perplexing question, a hundred new questions emerge.

I was reminded of LaRochefoucald's statement when I delved recently into the problem of why, on meeting nights at UGa-Griffin, we so often arrive to find the Stuckey Bldg. or its classrooms locked or being used by other groups, necessitating a last-minute scramble to find another meeting room.

I went to **Art Cain's** office to ask his secretary to check the school calendar to see if a room would be available for our Oct. meeting. His secretary wasn't there, but the lady I talked with was the person who schedules UGa-Griffin's facility usage. She said that, for whatever reason, FRAC wasn't on their calendar for classroom usage, but that she would put us on it on an ongoing basis for the 2nd Thurs. of every month from 7:30-9:00 p.m. She moved us to a larger classroom, Room 305 in the Flint Bldg., which is the building across the parking lot from the front lawn where we conduct our monthly lunar observing.

Problem solved, right?

Well, not exactly…

When we arrived on our Oct. meeting night, the Flint Bldg. and Rm. 305 were locked, and both classrooms in the Stuckey Bldg. were in use. Art Cain unlocked the Flint Bldg. and Rm. 305 for us, then moved us to the other end of the building because 305 was decked out with refreshments for a meeting the next morning. The room we wound up in was barely large enough to accommodate our 19 attendees.

Bottom line: We still weren't on the calendar.

I'll check with them again before our Nov. meeting to see if we've been put on their calendar. If so, it's a problem solved – but if not, we may need to consider finding somewhere else to hold our meetings. We talked about that problem briefly at a board meeting in Sept., and we have a couple of places in mind if necessary. We'd rather stay at UGa-Griffin, of course, if they'll put us on their calendar as the lady said she would. But the room should be open and available when we arrive. We shouldn't have to look for a security guard every month to open locked doors.

At any rate, there's the old "Tarzan Principle" to consider, i.e., *When swinging through the treetops,*

don't let go of one vine until you have a firm grip on the next one.

Elsewhere… In October, we began scheduling one Cox Field observing weekend rather than two. (Our UGa-Griffin lunar observing replaced the other weekend.) Here's how it went: We had six at Cox Field on an unscheduled evening; six the following Fri. and 12 on Sat. (our observing weekend); and 11 at our UGa-Griffin observing.

It's been a dozen years or more since we've had 54 attendees at FRAC activities in a single month (35 at observings, 19 at our meeting), so I guess you could call it a successful experiment -- so far, at least. The UGa-Griffin observings have been immensely successful: since starting them last June, we've averaged 12.5 FRAC attendees per session.

Of course, it's not the number of scheduled observings that brings people out, but the number of clear nights for observing. When the weather, Moon and skies are favorable, participation rises regardless of whether it's a scheduled or unscheduled weekend. In both cases, members shoot out e-mails asking, "Is anybody coming to Cox Field tonight?," just to ensure that they won't be alone.

Finally, here's a big 'WELCOME TO FRAC!" to our newest members, **Curt & Jill Carroll,** of Gray, Ga., and **Dave Fulton** of Griffin and his grandson, **Colter Chasteen.** Curt was involved in astronomy about 15 years ago, and is coming back hoping to get into astrophotography. Colter has a neat cell phone that doubles as a mini-sky atlas: just point it at the sky, and it shows you what constellation and stars you're pointing at. It even includes the Messiers.

-Bill Warren

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Last Month's Meeting/Activities. On the evening of Oct. 2nd, while UGa's football team was finding a way to lose its 4th game in a row, six stalwart skysearchers – **Tom Danei, Larry Higgins, Doug Maxwell, Joe Auriemma, Steve Knight** and **yr. editor –** were out at Cox Field for an unscheduled observing, looking for (and finding, thanks to Doug) **Comet 103P/Hartley 2.**

Larry knew where the comet was supposed to be – he had seen it in binoculars that morning – and we had a *Sky & Telescope* finder chart showing Hartley 2's predicted route from Aug. through Nov. But there were two problems: (1) The comet wasn't very bright, and (2) it wasn't where it was supposed to be. If it hadn't been for Doug finding it and showing everyone what it looked like and where to find it, we probably would still be looking for it.

So what did Hartley 2 look like on Oct. 2nd? Well, it was pale green, and so faint as to be best seen via averted vision, which made estimating its size somewhat of a guessing game. (Best guess: about 3-4 arc-minutes in dia.) It was round, with no identifiable nucleus although the central area was occasionally brighter. There was no tail, either – but all that would change a week later, as you'll see.

What the comet looked like, then, was a dim planetary nebula with indistinct edges and no central star visible – a faint green circle that faded away from the center. But it *was* a comet, and comets are always exciting to see.

Hartley 2 was brighter the following Friday night at Cox Field for **Art Zorka, Larry Higgins, Dwight Harness, Jessie Dasher,** new member **Curt Carroll** and **yr. editor.** We saw the tiny (1 mi. in dia.) nucleus via direct vision in 4", 8" , 10" and 12" 'scopes, and there was even a tiny tail peeking out of the coma. Art stayed out till 4 a.m. chasing down Herschel 400s in a slowly rising ground fog.

The following evening saw ten FRACsters and two visitors – that's twelve people in all, **Dan Pillatzki,** you don't have to take off your shoes and socks to do the math – at The Cox. Besides **Betty Boop** – pardon us, **Betty *Bentley*** – who managed to drag **Steve** away from the Cartoon Network long enough to spend a few hours with us, the other attendees included: **Alan & Vicky Pryor; Tom Danei; Carlos Flores; Larry Higgins; Doug Maxwell; Charles Turner; yr. editor;** and two neighbors of the Coxses, **Doug & Carmen Newman.** Alan got some great astrophotos, and once again Doug was first to find the comet. Not bad for a guy scheduled for eye surgery, huh?

We had 19 members at our Oct. meeting: **Dave Fulton,** who joined FRAC that evening; **Bagitta & Chris Smallwood; Olga & Carlos Flores; Betty &**

Steve Bentley and their granddaughters, **Brianna & Erin Mills; Cynthia Armstrong; Charles Turner; Smitty; Doug Maxwell; Joe Auriemma; Erik Erikson; Tom Danei; Larry Higgins; Tom Moore;** and **yr. editor.** Carlos showed a dvd about Griffith Observatory in Los Angeles, CA.

Since opening in 1935, Griffith Observatory has been America's most successful public observatory, despite its light-polluted location. It sits atop Mt. Hollywood, inside the city limits of one of the world's largest metropolitan areas.

The observatory attracts 2 million visitors annually, and Griffith's 12-in. Zeiss refractor is the most widely used telescope in history. Admission is free -- but, as is happening everywhere due to our slumping economy, operating hours have been cut back to reduce expenses.

The following evening, eleven members – **Tom Moore; Steve & Betty Bentley; Larry Higgins; Charles Turner; Tom Danei; Dave Fulton** and his grandson, **Colter Chasteen; Cynthia Armstrong; Carlos Flores;** and **yr. editor** – showed the sky to visitors at our monthly UGa-Griffin lunar observing.

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This 'n That. In case you didn't know, the inner portion of a comet is known as its **head.** The head is composed of two parts: the **coma,** or the round part we see; and the **nucleus,** or solid core within the coma. You don't always see the nucleus, nor is the other part of the comet – the **tail(s)** composed of gases (the bluish *ion tail*) and dust particles (the brownish *dust tail*) – always present or evident.

Every comet is unique in terms of what can be seen. Some are spectacular, sporting any number of long, colorful tails stretching for millions of miles across the sky; other comets can hardly be seen at all, depending on factors such as their age, size, orbital period, brightness and the amount of material released from the nucleus as the comet moves toward or away from the **Sun.**

Most children are curious about, or interested in, the night sky, the Sun, **Moon,** and planets. For many adults, the appearance of a spectacularly bright comet rekindles that curiosity and interest, and entices them to join the ranks of amateur astronomers. Nothing else in the night sky draws masses of people into astronomy the way a bright comet does. That's why we're always excited about the appearance of a potentially bright comet.

*Remember how cold it got last winter? (An old **Bob Hope** joke for U. S. troops stationed in Alaska: "It's so cold that, when I went into my bedroom last night, one bed was getting into bed with another bed.")

Well, winter is just around the corner, so you need to go to our website's Articles link and read (or re-read) **Smitty's** wonderful article, "Of Mukluks and Messiers."
http://www.flintriverastronomy.org/Articles/ofmukluks.pdf
It's filled with tips for staying roasty-toasty warm when the temperature outside is colder than an IRS agent's heart.

Smitty's philosophy is brilliantly simple, i.e., *If you wear enough of the right kinds of clothing, you'll stay warm regardless of how cold it is.* He covers all the bases literally from the ground up, starting with how to keep your feet warm and working his way upward by stages to the top of your head.

***An Open Letter to Curt Carroll (and anyone else who hasn't already done so):** You need to go to our website and follow the link at the bottom of the page to join our message group, frac-a. Then go to the Photos link on that site and check out what our astrophotographers have done and are doing.

*While in Auburn, AL on Oct. 9th, **yr. editor** and **Weezie** couldn't resist the opportunity to go 55 mi. farther west and revisit Wetumpka, 12 mi. N of Montgomery. We didn't retrace the original tour of the meteor crater due to time constraints, and the leaves hadn't fallen so the views were somewhat limited. But it *was* Wetumpka, where a 1,100-ft.-wide meteor plowed into the shallow sea 83.3 million years ago. The impact created a 4-1/2-mi.-wide crater whose outer rim, seen from afar, resembles a small mountain sprung up suddenly from the tabletop-flat land around it.

We showed **Weezie** the rocky outcropping behind the CVS pharmacy where, at impact, the earth folded

back on itself to reveal a previously subterranean layer of metamorphic rocks that are arranged in a crazy-quilt pattern of wildly slanting layers.

Having seen the area, Weezie now understands why, like the singer **Tony Bennett** who left his heart in San Francisco, a small part of the hearts of the 17 FRACsters who visited Wetumpka in Oct., 2008 still remains in that awe-inspiring area.

*Both of **Doug Maxwell's** laser eye surgeries were successful. We're happy for ya, Doug -- and those of us with aging eyes are extremely jealous!

After the first surgery, **Art Zorka** suggested that Doug ought to ask the physician to put an H-alpha filter in his other eye.

***Trivia Question:** *Where did the **Milky Way** get its name?* (Answer on p. 6.)

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Upcoming Meetings/Activities. Our Cox Field observings will be ideally suited for deep-sky observing, falling as they do on **Fri.-Sat., Nov. 5th-6th.** (The **New Moon** is on the 6th.)

Our club meeting will be at 7:30 p.m. on **Thurs., Nov. 11th,** in Room 305 of the Flint Bldg. on the UGa-Griffin campus. (The Flint Bldg. is the one on the other side of the electronic gate from the Stuckey Bldg.) Our program, "Thinking Small," will feature **Larry Higgins, Erik Eriksen** and **yr. editor** showing & telling about small telescopes in amateur astronomy. We'll also give you a sneak preview of the door prizes to be awarded to lucky recipients at this year's Christmas party at Ryan's on Fri., Dec. 10th.

On **Thurs., Nov. 18th,** FRAC will conduct a 1-1/2-hr. observing at Hubbard Middle School in Forsyth, Ga., as part of the school's "Science Night" activities. More than 100 students and parents are expected to participate, so we'll need as many FRACsters and your telescopes as we can get. Please try to join us if you can.

If you want to find the school on Google Maps or Mapquest, the address is: Hubbard Middle School, 500 Ga. Hwy. 83 South, Forsyth, Ga. 31029. Or, you can use these directions:

To get to the school from, say, Griffin, take Ga. Hwy. 16 East (Arthur K. Bolton Pkwy.) to I-75 South. Go 18 mi. south on I-75 to Exit 187 (Ga. Hwy. 83) in Forsyth. (The school is on Hwy. 83.)

Bear right off I-75 onto Hwy. 83 (Cabaniss Rd.). Then go 0.6 mi. and turn right onto W. Main St. Go 0.5 mi. on W. Main St. and turn left at Culloden Road. The school is 0.9 mi. ahead. (Just follow Hwy. 83 from the Interstate and you can't miss it.)

The program starts at 6 p.m., and ends at 7:30. Plan on getting there early to set up – and dress warmly, since this is, after all, mid-November.

On the following evening, **Fri., Nov. 19th,** we'll hold our monthly UGa-Griffin lunar observing on the Experiment St. lawn as usual. Admittedly, it's a rather poor choice of dates (just three days before the Full Moon), but since we had already re-scheduled the event for other reasons, **yr. editor** couldn't face calling **Art Cain's** office to change the date again. Sorry 'bout that; we'll just enjoy each other's company as usual and show visitors other things in the sky until the Moon rises. (We'll also bring along some 3-D glasses and some old issues of *Astronomy* featuring 3-D images of **Mars, Venus** and other places in the solar system.)

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People You Should Know: Steve Knight. If you're new to FRAC, you may have wondered about the big dark-haired guy sitting near the back of the room at our meetings. *No*, it's NOT the horror writer **Stephen King,** although they look very much alike. You're half-right, though: it's **Steve Knight,** and he's a guy you oughta know.

At various times in the past, Steve has served as FRAC's president and/or treasurer. While president in 2004, he initiated the first **Ga. Sky View** star party, and coordinated it for the first five years of its existence.

Here's how it happened:

Speaking at a FRAC meeting in 2003, **Phil Sacco** suggested that FRAC should host a star party at Camp McIntosh, since the Atlanta Astronomy Club's Peach

State Star Gaze star party had outgrown that site and moved elsewhere. Phil probably thought that no one was listening, since nobody with a grain of sense ever listens to Phil except at gunpoint. *(Sorry, Phil, da debbil made me write that! –Ed.)*

But someone *was* listening: Steve Knight. Steve picked up the ball, started it rolling and ran the show for five years before turning it over to the capable hands of **Steve Bentley.**

Weary from his ongoing labors, Steve (Knight) has been relatively inactive in the club for the past couple of years. But in accepting the post of Scouting Coordinator he has announced his willingness to resume an active role in the club. Steve is a likeable, skilled spokesman for astronomy and FRAC. He and **Larry Higgins** are the club's astrotechnology gurus.

Steve works as a territory sales manager for Standard Motor Products. He lives in Griffin with his wife **Angela** and their teenagers **Ashley & Josh.**

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Rambling Around Ruchbah: A November Observing Project for You. Due to its location in the plane of the Milky Way, the constellation *Cassiopeia* is home to many fine open clusters. Six of them – **M103** and **NGCs 436, 457, 654, 659** and **663 –** are located within easy scanning distance of 3rd-mag. **Delta Cassiopeiae (Ruchbah,** probably pronounced REWK bah**).** M103 is, of course, a Messier object; the rest are Herschel 400 Club targets.

Consisting of five 2nd- and 3rd-mag. stars that form a "bent **W**" or "bent **M**" shape (depending on how you look at it), Cassiopeia is one of the brightest and most recognizable constellations in the northern skies. For star-hopping purposes, **yr. editor** has always numbered those five stars as follows:

One end of the "W" forms roughly a right angle consisting of 2nd-mag. **Beta Cas (Caph),** 2nd-mag. **Alpha Cas (Schedar)** and 3rd-mag. **Gamma Cas** at the center of the "W". The other two stars, 3rd-mag. **Delta Cas (Ruchbah)** and 3rd-mag. **Epsilon Cas,** form the bent part of the "W". For our purposes, Beta will be #1, Alpha #2, Gamma #3, Delta (Ruchbah) #4, and Epsilon #5.

Find Ruchbah on a star map – any star map showing Cassiopeia -- and we'll go from there. (After finding these targets at low power, you should increase the magnification to see more of the fainter stars. And oh, by the way, open clusters and asterisms make interesting astrophotos. [Hint, hint.])

M103 is located about 1^{o} -- that's one pinky-width held against the sky -- NE of Ruchbah. The cluster consists of 25-50 stars of varying brightness forming a fan- or arrowhead-shaped triangle that's about as large in your low-power view as the outermost joint of your index finger. Five stars in the cluster are brighter than the rest. A mag. 5 star lies at the N tip of M103, and there's a very red mag. 8.5 star SE of the cluster.

M103 is neither the brightest nor the prettiest of these six clusters – but it's a Messier. 'Nuff said.

NGC 457 (the Owl Cluster) is one of the prettiest and most interesting open clusters in the entire night sky. To find it, imagine a line connecting Epsilon (#5) with Ruchbah (#4). Extend that line about a thumb-width beyond Ruchbah and scan the area about the same distance below the "bent W." You'll know you have it when you identify the owl's bright eyes, esp. the mag. 5 yellow one.

NGC 457 contains a loose grouping of 50 stars in an area about twice as large as M103. The two brightest stars, located near the SE edge, are the mag. 5 yellow star **Phi Cas** and pale blue **HD Cas** (mag. 7). Those stars comprise the Owl's eyes. A group of bright and faint stars to the NNW form the bird's body. Two rows of stars radiating out from either side of the body form the owl's outstretched wings, and two other stars lying NW of the body comprise the owl's feet.

Identifiable star patterns that resemble earthly objects or creatures are called *asterisms.* One of the fun things about loose clusters and asterisms is that they often can be seen as any of several objects or creatures. In the case of NGC 457, it has been described as an owl, a dragonfly in flight, or a large-headed stick figure with arms extended to the sides. (Thus its other familiar nickname, the "**E. T. Cluster**.") Yr. editor has always seen it as a jet

fighter plane with artillery shells exploding in front of it. (The "eyes" of the owl are the engines of the jet.)

Give 457 a look-see: *What do* you *see it as?*

NGC 436 is located in or very near the same low-power telescopic field of view as 457. Smaller and fainter than NGC 457, NGC 436 lies slightly NW of three mag. 10-11 stars aligned in a straight E-W line. The cluster contains about 30 stars, mostly faint, and it's separated nicely from the surrounding star field. It's best observed at medium or high magnification.

NGC 663 is slightly larger than the Owl Cluster, and almost as bright. To find it, go back to the imaginary line between Epsilon Cas (#5) and Ruchbah (#4). Stop at the center, move below the "bent W" for about 1-1/2 pinky-widths and scan that area. You'll know when you've found it: NGC 663 is bright and contains 70-75 stars in all, two dozen of which are brighter than the rest. A mag. 6.5 star lies less than $1/2^{o}$ away from the cluster to the NW.

The center of NGC 663 is stunning at high power, appearing as two elongated groups of stars with a dark lane running NNW-SSE between them. Pretty double stars are sprinkled throughout the cluster.

Why Messier overlooked NGC 663 in favor of M103 is anybody's guess, since 663 is much prettier, brighter and more obvious.

NGC 654 is an easy find, located about 40% of the way from Epsilon Cas (#5) to Ruchbah (#4) and about $1/2^{o}$ off the line between and below them. 664 is slightly smaller than M103, and contains roughly 20 stars in an area about as large as your thumbnail at low power. A mag. 7 star lies at the SSE edge of the cluster. Most of the stars in 664 are faint, giving it a somewhat hazy appearance at low magnification.

NGC 659 is located in the same low power field of view as NGC 663, $1/2^{o}$ away to the NE. Smaller and fainter than NGC 654, NGC 659 contains 15-18 faint stars in an area about the size of your pinky fingernail in your low-power field of view. The NE portion of the cluster is concentrated with bright and dim stars. A bright (mag. 6) star, **44 Cas,** lies close to the cluster to the SW.

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Answer to Trivia Question on p. 4: For as long as humans in the northern hemisphere have looked up at the night sky, they've seen a long, narrow cloud that doesn't go away, stretching from *Sagittarius* in the south through and beyond *Cassiopeia* in the north. The earliest stargazers knew nothing of constellations, but they recognized that white band as a stable fixture of the night sky during the summer months.

Ancient Chinese astronomers thought it was a silver river. The Mayans thought it was a celestial path that led to the underworld. In Greek mythology, it was milk spilled by the goddess **Hera** while suckling **Hercules**. The Greek word *galaxios* (from which our word *galaxy* is derived) means "milky." And since the Greek and Roman words for "way" referred to a road or path, the Milky Way was a "milky road" spanning the night sky from north to south (or vice versa).

Aristotle wrote that two Greek philosophers, **Anaxagoras** (500-428 b.c.) and **Democritus** (460-370 b.c.) believed that the Milky Way was composed of masses of individual stars that were too far away or dim to be seen as such.

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By convention there is color, by convention sweetness, by convention bitterness, but in reality there are atoms and space.

-**Democritus** *(Fragment 145)*

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Errata. In last month's *Observer*, we incorrectly described **Tom Danei's** telescope, Stumpy, as being a 16-in. truss-tube Dob. *(Sorry 'bout that, Tom, it was a typographical error. –Ed.)*

As everyone knows, Tom's 'scope is actually a 3-in. Tasco refractor that was manufactured in Namibia. (*Oops, another typo. We need to lock up the Wild Turkey when editing the newsletter. Stumpy is actually an 18-in. truss-tube Dob. –Ed.)*

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