

THE FLINT RIVER OBSERVER

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

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Officers: President, **Bill Warren:** (770)229-6108, warren7804@bellsouth.net; Vice President, **Larry Higgins;** Secretary-Treasurer, **Steve Bentley.**

Board of Directors: **Dwight Harness;** **Tom Danei;** and **Felix Luciano.**

AlCor/Webmaster, **Tom Moore;** Ga. Sky View Coordinator, **Steve Bentley;** Observing Chairman/Public Observing Coordinator, **Dwight Harness;** Program Co-Chairmen, **Larry Higgins** and **Bill Warren;** NASA Contact, **Felix Luciano;** Event Photographer, **Tom Danei;** and Newsletter Editor, **Bill Warren.**

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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., Oct. 8-9: Cox Field comet observings (at dark); **Thurs., Oct. 14:** FRAC meeting (7:30 p.m., Stuckey Bldg. on the UGa-Griffin campus); **Fri., Oct. 15:** UGa-Griffin lunar observing (7:00 p.m.).

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President's Message. At a Board of Directors meeting on Sept. 20th, FRAC's officers and board members discussed, among other things, the immediate future of **Georgia Sky View.** After considering our state and nation's floundering economy – 14 million workers unemployed nationally, including 10% of Georgia's work force –

and its dramatic impact on GSV '10, the officers and board members reluctantly voted to temporarily suspend Georgia Sky View.

That's not to say that our star party will not return in 2012, of course. But according to GSV coordinator **Steve Bentley**, if not for **Betty's** breakfasts and midnight munchies, we'd have lost at least \$400 on GSV 2010.

Other considerations also factored into the Board's decision:

Over the past two years, the Ga. Dept. of Natural Resources (DNR) has undergone severe budgetary cutbacks (34%) and initiated rate increases at all of its facilities, including Indian Springs State Park. (Camp McIntosh is operated by ISSP.) In 2008, they doubled their daily rental fees for Camp McIntosh to \$500 per night, and the DNR is searching for additional sources of revenue and further ways to cut back expenses at the state parks. There's even talk of DNR closing down some of its facilities due to high operating and maintenance costs. ISSP isn't one of them presently, but that could change.

After a rainy 3-day/2-night GSV in 2008, we acceded to the requests of our non-member attendees and increased our weekend star party to 4-days/3-nights in 2009. The Board considered reverting to the 3-day/2-night format in 2011. However, in light of anemic attendance figures for GSV '10 – 32 paying registrants, including just ten non-members – and fueled by lingering memories of the disastrous 2008 rainfest – the Board preferred to postpone GSV until our economy recovers.

Several alternatives to hosting a star party were discussed at the board meeting, including:

*An overnight cookout/Zombie party/campout at Cox Field or elsewhere;

*A weekend trip to Chiefland Astronomy Village in Fla. (**Tom Crowley**, who owns the land where Chiefland's star parties are held, said he'd be happy to accommodate us); and/or

*An overnight observing and campout at Deer Lick Astronomy Village near Sharon, Ga. and 50 mi. west of Augusta. (AAC member **Keith Davidson** said he could make the arrangements.)

Admittedly, none of those alternatives or others can adequately replace GSV. But in troubled times

like these, it's necessary to protect FRAC today in order to ensure its tomorrows.

Finally, a clarification: While the club can and will discuss and vote on the alternatives listed above (and possibly others as well) at a future club meeting, FRAC's Bylaws (Art. 4, Sect. 2) state that "The Officers and Board of Directors shall decide whether the club should host Georgia Sky View in the following year." The Board's decision to cancel GSV 2011 was unanimous, with me abstaining from voting in accordance with the Bylaws (Art. 5, Sect. 4): "The President shall vote (at Board meetings) only to break ties." There was no tie, so I didn't vote.

Davy Crockett once said, "Be sure you're right; then go ahead." Our nation's leaders haven't done that, and look where it's gotten us. As taxpayers, we're like flies waiting for the swatter to descend. But flies only get swatted once, and we're getting hammered over! and *over!* and *over!* and **OVER!**, almost on a daily basis. (An estimated *one million* people will lose their homes through foreclosure in the next year. And if you don't think that that will affect you, you're like the guy in a boat who is laughing because the other end of the boat is sinking.) This is just the tip of the iceberg unless our leaders start acting responsibly.

And that's what your officers and board members are doing regarding GSV: acting responsibly.

The decision to postpone GSV was not made lightly, nor was it a happy one. But it reflects what is best for FRAC, given the circumstances.

Finally, here's a resounding "**WELCOME BACK!**" to **Steve & Aimee Mann** and **Joe & Martha Auriemma**, two pairs of former members who are safely back in the FRAC fold. We've missed y'all, folks, more than you know. And we're ever so glad to have you back where you belong.

-Bill Warren

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Last Month's Meeting/Activities. On Aug. 31st, **Tom Moore, Larry Higgins, Steve Knight** and **yr. editor** manned a FRAC booth at a homeschooling kickoff meeting held at First United Methodist Church in Griffin. About a hundred parents and children

attended, and they kept us busy for 3 hrs., giving out free astronomy handouts and talking about FRAC.

Eight FRACsters showed up at Cox Field for an impromptu observing session on Sun., Sept. 5th: **Tom Danei** and "Stumpy," his 16-in. truss tube Obsession Dob; **Carlos Flores**, who brought along some handout materials from NASA that he picked up at "Dragoncon," the recent sci-fi/fantasy convention in Atlanta; **Alan & Vicky Pryor**; **Larry Higgins**; **yr. editor**; and **Keith Cox** and his dad **Loyd** (who owns Cox Field).

So why did so many people show up on a Sun. evening? Two reasons: first, the sky was the kind of crystal-clear that makes you wanta wipe away the cobwebs from your 'scope and get out and visit some old friends in the sky. And second, Alan sent out a fragroups message asking if anyone was interested in joining him at The Cox for a few hours of observing. It worked, too, and all of us were glad we came.

Especially yrs. truly. It was a magical evening in the sense that, for one remarkable evening, he was able to relive the glory days of a decade ago when his vision was better and he routinely found deep-sky objects, both familiar and obscure, and whether easy or difficult to find, by the dozens. It reminded him all over again of just how much fun observing can be when the sky cooperates.

We knew that **Anita Westlake's** "Meteorites" presentation at our Sept. meeting would be a good one when we saw the license plate of her car: **SKYROX.** She didn't disappoint, either, as our 25 attendees will tell you. As **Roger Brackett** put it, "I feel sorry for anyone who was unable to make it."

Anita talked for more than an hour, passing around meteorites of various types and sizes and deftly fielding questions from her interested listeners. Then she stayed an additional half-hour so we could examine other meteorites from her collection of more than 200 space rocks. Several members bought meteorites; for example, **Dwight & Laura Harness** are now the proud owners of two tiny but valuable meteorite fragments, one whose origin was the **Moon** and the other from **Mars**. For a space cadet like Dwight, that Martian meteorite must have been like the "green, green grass of home."

Other attendees included: **Sally & Alan Bolton;** **Olga & Carlos Flores** and their guest, **Lena Raikkonen** from faraway, frigid Finland; **Tom Moore;** **Bagitta & Chris Smallwood;** **Joe Auriemma** (who rejoined the club at the meeting); **Steve Knight;** **Steven “Smitty” Smith;** **Erik Eriksen;** **Jessie Dasher**, whose steady stream of humorous comments resembled a “Seinfeld” monologue; **Charles Turner;** **Brit & Tom Danei;** **Felix Luciano;** **Cynthia Armstrong;** **Larry Higgins;** visitor **Charles Smith;** and yr. editor and his blushing bride of 39 years, **Louise Warren.**

(Incidentally, Ms. Westlake was prepared for (but wasn’t expecting) the broad level of understanding that our members displayed. It wasn’t just one or two people involved, either: at least half of the members present spoke up at one time or another, whether to answer her questions, pose questions of their own, or comment on what was being said.

On Sept. 10th, four members – **Larry Higgins,** **Mike Stuart,** **Dwight Harness** and yr. editor attended our Cox Field observing. The sky was difficult but observable. We couldn’t find **Comet Hartley 2**, but we watched a shadow transit on **Jupiter** blink in and out of view. The missing South Equatorial Belt was still missing.

We stayed until around midnight, not with any real hope of the sky improving but because it was just so dadgummed much fun seeing Mike and observing with him again.

After a slow start, it looks like we’re making progress in our attempts to bring astronomy to Griffin via our monthly lunar observing. We had a good turnout for our Sept. session, including eight FRACsters and a crowd of visitors that was sufficient to keep all of us busy for nearly three hours.

FRAC’s attendees included: **Steve & Betty Bentley** (she isn’t ready yet for line dancing or doing the limbo, but is mending steadily); **Phil Sacco** (whose mom was there, getting to see for the first time how splendidly her son interacts with other people at such events); **Art Zorka** (who is working on the 10th and final pin necessary for him to become a Master Observer); **Tom Moore;** **Erik Eriksen;** **Charles Turner;** and last but certainly not least, yr. editor.

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This ‘n That. If you want to contact **Anita Westlake**, you can reach her at www.meteoriteassociationofgeorgia.com.

***Tom Danei’s** marvelous 4-min. cd, “The Night Sky Explorers,” is back on our website in slightly revised form. If you haven’t seen it, you owe it to yourself to do so at your first opportunity.

Like the original, for which our permissions expired a few months ago (thus necessitating the revision), it features host **Phil Sacco** telling the world what astronomy and FRAC are all about.

There’s nothing else quite like “The Night Sky Explorers” on the web, and only **Timothy Ferris’s** high-budget, feature-length production, “Seeing In the Dark,” even begins to approach it in terms of quality.

*There are several points to be made regarding our earlier rambling discourse on unscheduled observings at Cox Field.

First, if you’re interested in observing whenever you can, you aren’t the only one in FRAC who feels that way. Lots of us enjoy going out to see what the sky has to offer. But not everyone enjoys the prospect of observing alone, especially when it entails packing your gear, driving to Cox Field, setting up and later packing up for the trip home, and then unpacking again when you get there. Sometimes all it takes is shooting out a fragroups query, “The sky looks good for tonight, is anyone interested in going out to Cox Field?,” to start members thinking about it.

Second, there’s the fact that *sometimes the best evenings for observing come during the week or on Sundays*. After all, the odds of having a clear night for observing favor Monday through Thursday (and Sunday) by a margin of 5-2. And while people who work the next day can’t travel far or stay as late as they normally might, they may be able to fit a couple of hours for observing into their schedules if they know that others are interested in joining them. Several of our regular Cox Field attendees are retirees.

Of course, the sky doesn’t always cooperate – now, *there’s* a shocking statement! – but when it does, even regular attendees sometimes need to be reminded that a given weeknight, Sun. evening or unscheduled

weekend can offer excellent observing prospects. (That certainly was the case on Sun., Sept. 5th!) After weeks or even months of constantly poor skies, it's easy to fall into the rut of not expecting conditions to improve, and thus not bothering to go outside and see what the sky is doing.

***Weezie's Green Meteor.** At 6:25 a.m. on Mon., Sept. 13th, yr. editor's wife **Louise**, a teacher at Orrs Elementary, was on her way to school. It was still dark outside as she waited for the traffic light to change from red to green at the Griffin Waffle House intersection on Ga. Hwy. 16 East.

While Weezie was watching the stoplight, a bright green light streaked across the cloudless sky in front of her. "Whatever it was," she said later, "it was in a hurry to get there! I saw it for just a second or two."

Judging from Weezie's location, the object must have been moving roughly from N-S. It neither dimmed nor brightened, but simply blinked off while zipping across the sky above the stoplight. It left behind a green vapor trail that faded away after a few seconds.

She called from school to ask what she had seen.

We quickly ran through a list of the usual suspects (planes, satellites, weather balloons, planets, rockets, UFOs, etc.), and discarded each on various grounds, settling on the most likely answer, i.e., a *green meteor*.

In researching green meteors on the web, we found that, whether you regard them as rare or commonplace depends on how many of them you've seen.

Obviously, the more time you spend outside looking up at the sky at night, the more meteors, green and otherwise, you'll see.

Several sources remarked that an unusually large number of Perseid meteors are green, possibly because the Perseids shower is more productive than most others. So what Weezie saw might have been a stray Perseid meteor arriving late for the party a month after the rest of the Perseid meteors had packed up and gone home.

So why might a given meteor be green? We found two answers, the latter of which is the more likely explanation. First, the space rock might have contained copper or magnesium, both of which burn

green when traveling through Earth's atmosphere at 30,000 mph. And second, the meteor's high-speed passage through the atmosphere creates intense pressure (called *ram pressure*) on the air in front of it. The heat generated by that pressure ionizes the surrounding oxygen, producing a green glow and vapor trail that fades away after a period ranging from a few seconds to as much as 45 minutes.

*In his latest book, *The Grand Design* (Bantam, 2000, co-authored with **Leonard Mlodinow**), the renowned physicist **Stephen Hawking** offers the controversial contentions that (a) theology is unnecessary, and (b) God did not create the universe.

"God may exist," Hawking recently told CNN interviewer **Larry King**, "but science can explain the universe without the need for a creator."

Hawking contends that "Gravity and quantum theory cause universes to be created spontaneously out of nothing... Science can explain the universe, and we don't need God to explain why there is something rather than nothing, or why the laws of nature are as they are."

And how did the universe spontaneously and suddenly create itself?

In *The Grand Design*, Hawking sets forth an "M-theory" in which many universes have arisen out of the void, and none of them required God's participation. If there are multiple universes, he says, at least one of them will follow our laws of physics. In such a universe, something inevitably will spring from nothingness into being due to gravity and quantum physics principles.

When asked by King why so many people have reacted negatively to his book – a dumb question if ever there was one! – Hawking replied, "Science is increasingly answering questions that used to be the province of religion. The scientific account is complete. Theology is unnecessary."

Rather than debate such an inflammatory issue, we might simply wonder why Hawking chose to bring it up at all, since it was guaranteed to alienate him from that portion of his audience who don't share his views. Hawking's predecessor as the poster child of physics, **Albert Einstein**, studiously avoided taking sides or even bringing up the subject of creationism vs.

science. Einstein professed to believe in God, but he didn't use that belief as the starting, middle or end point of his theorizing.

An atheist might say, *If a creator God exists, show him to me! Prove that He exists!*, to which a believer might respond, *Prove that Hawking's "M-theory" of multiple universes is a fact and not a theory!* It's an argument that cannot possibly be resolved to everyone's satisfaction. Regardless of what you believe, you aren't going to convince people who hold the opposing view that they're wrong. Therefore, it's an argument that should be avoided.

In that sense, at least – and possibly many others as well – Einstein was a heckuva lot smarter than Stephen Hawking.

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Upcoming Meetings/Activities. Our October Cox Field observing evenings will be **Fri.-Sat., Oct. 8th-9th**. Since there's a good comet up, periodic **Comet Hartley 2** (see below), we're calling it our Comet Weekend. If you and/or your family haven't yet had the opportunity to observe a comet, you need to join us at The Cox on either or both of those evenings. (It goes without saying that we'll be expecting some astroimaging of Hartley 2 by those of you who have interests and capabilities in that area.)

Carlos Flores will bring a dvd for our club meeting on **Thurs., Oct. 14th**, which will be held as usual in the Stuckey Bldg. on the UGa-Griffin campus.

Speaking of which...

In October, our UGa-Griffin lunar observing will be held at 7:00 p.m. on **Fri., Oct. 15th** instead of its usual Thurs. date (which this month would have featured a nearly full Moon). The hours, 7-10 p.m., will be the same.

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A Bright Comet in October. Throughout mankind's recorded history, few celestial events have generated as much public interest in astronomy as the appearance of comets. The arrival and lengthy stay of **Comet Hale-Bopp** prompted people all over the world to go outside at night to see what the fuss was all about. Hale-Bopp was the single most-watched

event in history: an estimated 4.5 billion people saw it. Impressed with what they saw, many of those curious observers became amateur astronomers.

October brings us another bright comet, the periodic **Comet 103P/Hartley 2**. It has been around since August or earlier, but at mag. 9-10 it didn't attract much attention.

By October, however, Hartley 2 should be lovely in binoculars or a telescope. (The Oct. issue of *Sky & Telescope* has an extended map on pp. 56-57 of its path across the sky from late August through early November.)

On Oct. 1st, Hartley 2 will be about mag. 6 as it passes 1.5° S of 2nd-mag. **Alpha Cassiopeia**. Better still, on Oct. 7th it will pass less than 1° S of the **Double Cluster (NGCs 689 & 884)** in *Perseus*. It will still be between or around the Double Cluster and **Eta Persei**, the 4th-mag. star at the top of the "Atlanta Braves A" that forms Perseus, during our Cox Field observing weekend of Fri.-Sat., Oct. 8th-9th. Not surprisingly, then, much of our attention on those evenings will be focused on the comet.

Hartley 2 won't be as bright as Hale-Bopp was. Hale-Bopp was far more compact, and thus its visible light was condensed into a tiny naked-eye triangle. And since Hartley 2 will be just 11 million miles from Earth as it passes us on its way toward and around the **Sun**, the glow of its tail will be diluted somewhat by its proximity to us.

Still, as any deep-sky observer knows, an object doesn't have to be brighter than everything else in the sky to be impressive. And Hartley 2 *will* be impressive! The only ways you'll fail to be impressed with Hartley 2 are if the sky is overcast every time you try to observe it – or if you stay inside to watch **Bristol Palin** on "Dancing With the Stars" when you could be outside dancing with the comet.

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An October Observing Project: Stop and Go in Cepheus. In Greek mythology, **Cepheus** was the king of Ethiopia, and his queen was **Cassiopeia**. They had one daughter, the stunningly beautiful **Andromeda**.

One day, in a burst of maternal pride Cassiopeia proclaimed her daughter to be more beautiful than the

sea nymphs, who were the offsprings of mighty **Poseidon**, the God of the Sea.

When Poseidon heard of Cassiopeia's rash boast, he became enraged and demanded that Andromeda be sacrificed to **Cetus**, the Sea Monster, or else he would destroy Ethiopia. Grudgingly, Cepheus complied and had Andromeda chained to rocks by the sea to await her fate.

Enter **Perseus** (the Hero), fresh from his victory over the snake-haired Gorgon **Medusa**, the mere sight of whom turned anyone who looked at her to stone. (Sort of like listening to **Roseanne Barr** singing the national anthem.)

Perseus saved Andromeda and destroyed Cetus, using the same brilliant tactic he had used to defeat Medusa. The story ends with Perseus and his princess riding off into the magenta-hued sunset to live happily ever after.

Now, forget all that except the part about Cepheus the King.

As a constellation, *Cepheus* tends to be generally overlooked by FRACsters for two reasons. First, there are no Messier objects in Cepheus. And second, the constellation lies in the northern skies, hovering in autumn above the sky glow of metropolitan Atlanta.

Still... Just because there are no Cepheid Messiers doesn't mean that there's nothing interesting in that constellation. And Cepheus lies high enough above Atlanta's sky glow for its five-star, "house" shape to be easily seen and identified, especially since one of those stars is mag. 2 and the other four are mag. 3. So what we'll be doing is **stop**-ping and **go**-ing in Cepheus.

The "Stop." Our stopping point will be, naturally enough, at a *red light*: **Mu Cephei**, a bright variable star better known as **Herschel's Garnet Star**.

Mu is easy to find once you've identified the five stars that shape the "house" of Cepheus. The two stars that form the house's foundation are mag. 2 **Alpha Cephei (Alderamin)** and mag. 3 **Zeta Cephei**. Mu forms the apex of an isosceles triangle below the "foundation" with those stars. (It might help to think of Mu as the basement.)

Varying in brightness between mag. 3.4 and 5.1 over each 2-year period, Mu is, according to *Night Sky*

Observer's Guide (Vol. I, p. 131), "one of the most deeply-colored stars in the sky." In fact, it is redder in small 'scopes than it is in medium-sized or large telescopes, where it tends to be orange-red or yellowish-orange.

Mu is a red giant star, of course. So like **Betelgeuse (Alpha Orionis)**, it's running out of fuel. Eventually, both of them will go supernova, but probably not before you get a chance to compare their colors and see for yourself the deep coloring that lends Mu its nickname.

The "Go." And what do you do when a stoplight changes to green? You *Go*, of course.

Most planetary nebulas appear green or greenish-gray in our telescopes. But few of them are as green as **NGC 40**, our "Go" object. *NSOG* describes the color of NGC 40 as "bright bluish green," but in **yr. editor's** Herschel 400 notes he described it as "a bright green disk" about the size of **Jupiter** at 147x, slightly oval with a bright (mag. 11) central star encased in the planetary halo. NGC 40 lies between a 9th-mag. star 2 arc-minutes away to the NE and a 10th-mag. star an equal distance away to the SW. Another mag. 10 star lies an additional 4 arc-minutes away to the SW.

NGC 40 is located 30% of the way from **Gamma Cephei** (the "roof" of the Cepheus "house") and **Beta Cassiopeiae** (the nearest star to Cepheus in the "bent W" shape of *Cassiopeia*), and slightly east – to the right of -- the line between them.

Incidentally, if you'd like to know more about the story of Perseus and Andromeda, the best source (in **yr. editor's** estimation, at least) is **Edith Hamilton's** *Mythology*. It was published in the 1950s, but it's still in print because people still want to buy it. You can find it in your local library or bookstore, or buy it used for less than \$3 (plus \$3.99 shipping) from amazon.com. Or, you can rent either the original or the remake of the movie "Clash of the Titans"; the original (starring **Harry Hamlin** as Perseus) is better, but neither of them is as good as Hamilton's wonderful book.

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