THE

FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT RIVER ASTRONOMY CLUB

An Affiliate of the Astronomical League

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Club Calendar. Thurs., June 23: Gordon College observing (9:15, Abbott's Farm near Barnesville); **Fri.-Sat., July 1-2:** Cox Field observings (at dark); **Fri., July 8:** UGa-Griffin lunar observing (7-10 p.m. on the Experiment St. lawn in front of the Flint Bldg.; **Mon., July 11 & Mon., July 18:** Camp Fortson youth observings (8:30 p.m., Hampton, Ga.); **Thurs., July 14:** FRAC meeting (7:30 p.m., Rm. 305, Flint Bldg., UGa-Griffin campus); **Fri.-Sat., July 29-30:** Cox Field observings (at dark).

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President's Message. Georgia Sky View. It's baaaaaack!

At our board meeting in May, FRAC's officers and board voted unanimously in favor of hosting **GSV 2012**, probably at Camp McIntosh where we've held seven GSVs in the past. Details are understandably sketchy at this point, since the event is still in its earliest planning stages.

One thing I *can* tell you now is that **Steve Knight** will be at the helm as GSV coordinator in 2012. Steve is intimately familiar with Ga. Sky View, having originated the event in 2004 and coordinated the first five GSVs. (See p. 2 for more about GSV 2012.)

I hope you're enjoying our members' astrophotos as much as I am. Their beauty – the photos, that is, not the guys taking them – inspires us in ways that written words cannot compare with.

So thanks, guys, for sharing the fruits of your talents and labors with us. (See p. 6.) I'm not alone in hoping that you'll continue to do so.

-Bill Warren

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Last Month's Meeting/Activities. Leave it to **yr. addlepated editor** to turn an otherwise excellent evening for observing into a mini-disaster.

As the only one at Cox Field for our June 4th observing, he couldn't think of anything better to do, so he lost one of his hearing aids and spent the rest of the evening searching for it. (If you think Cox Field isn't so dark anymore, try looking for a 3/4-sq.-inch hearing aid at night, even with a white light.) He found it the next morning on a return trip.

The following evening, **Larry Higgins, Dwight Harness, Erik Eriksen** and **Steve Knight** joined **yrs. truly** at The Cox. Nobody lost anything.

We had 17 attendees at our June meeting: **Doug Maxwell** and his grandson **Zachary; Larry Higgins; Cynthia Armstrong; Chris & Bagitta Smallwood; Steven "Smitty" Smith; Sam Harrell & Julie Avery; Carlos Flores; Tom Moore; Frank Hiller; Charles Turner; Tom Danei; yr. editor;** and

speaker **Steve Knight** and his wife **Angela.** Steve discussed his tentative plans for **Georgia Sky View 2012,** FRAC's superlative little weekend star party at Camp McIntosh near Indian Springs State Park. All Steve could say at this point was that it probably would be a 3-night/4-day event, the preferred dates being either Thurs.-Sun., Mar. 22-25 or Thurs.-Sun., Apr. 20-23, depending upon availability.

On June 9th and 16th, **Steve K. and yr. editor** conducted cub scout belt loop evaluations in Griffin. Steve also led a campfire observation for the group on June 17th.

Sam Harrell & Julie Avery, Larry Higgins, Betty & Steve Bentley, Erin & Brianna Mills (and Brianna's long-haired guest, **Tyler Phagin**), **Charles Turner, Steve Knight** and **yr. editor** hosted about a dozen visitors at our UGa-Griffin observing. It was the most animated, interested group we've had since we started doing the monthly lunar observings last summer. Sam hooked up his telescope to his mom Julie's laptop and gave us a view of the **Moon** that brought new meaning to the term *close-up.*

We finally managed to conduct our oft-postponed Sun City Peachtree observing – sort of. **Larry Higgins, Dwight Harness, Charles Turner** and **yr. editor** met **Cynthia Armstrong** at the site and showed the only visible celestial feature besides clouds, i.e., the **Moon,** until even ol' Luna packed it up for the evening after a brief appearance.

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This 'n That. Larry Higgins's cousin, **Dan Byous,** 53, passed away on June 17th while convalescing from heart surgery. Dan was a fine man, gentle and soft-spoken, and, like Larry, Dan was gifted in many areas. He will be greatly missed by all who knew him.

Dan is survived by, among others, his brother **Stephen,** an ex-FRAC member who lives in Washington, D. C.

*****We received four cards in the mail recently. One was a note from the Pre-K teachers at Orrs Elementary School, thanking us for conducting an observing for them in April. Two were postcards from **Jerry & Bev Williams,** who spent an entire month touring Australia and New Zealand. (Wow!) And one was a postcard from **Charles Turner,** a transplanted Californian who wrote, "It is great to be stargazing in San Francisco again!"

***Art Zorka,** who spoke at GSV '10, recently completed the requirements to become a Master Observer in the A. L. Art is only the 3rd Georgia to achieve MO status.

*****FRAC's older members often bemoan the shortage of young people in astronomy. Yet as *Astronomy* reader **Rick Angell** of Boulder, Colorado points out, maybe we're expecting too much, too soon. Whenever anyone asks where the young folks are he replies, "They just aren't here (at star parties or club meetings) -- yet...Astronomy is a hobby that more people come to, or come back to, later in life." ("Letters," *Astronomy,* July, 2011, p. 10.)

Angell was interested in astronomy as a youth. "But then, as a young adult, I became involved in other things. My life as a young husband and father was oriented differently. I didn't return to astronomy until my late 40s. Until then, I didn't have the time and resources to pursue the hobby at the depth I now enjoy."

Most children are at least marginally interested in astronomy. For most of them, however, that interest tends to fade a few years later when, as teenagers, hormones kick in and turn them into different people with different priorities. **Katie Moore** was an important exception to that rule; that's why we still talk about her so much.

So what (is/are) the parent(s) of children who are interested in astronomy to do? It depends on the child's age.

It's almost always a bad idea to buy a small child a telescope, since the **Moon,** planets and maybe a few bright star clusters are the only things they'll be able to understand or appreciate. Everything else in the night sky will be just an indistinct, meaningless blur. (Sort of like **Dan Pillatzki.)**

That's why we recommend to parents of small children that, before purchasing a telescope, they buy either **H. A. Rey's** *The Stars: A New Way to See Them* or the beginner's star atlas *Seasonal Star*

Charts, and take it outside with their child to see what constellations and stars they can find. Then, if the child is still interested, they can explore other, more advanced options such as a telescope.

For children in the 10-12 age range, there are three important *Don'ts* about telescopes. First, *don't* buy a bottom-of-the-line, el cheapo 'scope that's so unsteady and cheaply made that not even **Sir Isaac Newton** or **John Dobson** could make it work properly. Second, *don't* take out a 2nd mortgage on the house to buy an expensive 'scope for a child whose hormones haven't kicked in yet, unless you plan to be the primary user while the kid grows up. And third, *don't* expect the child to learn how to operate the telescope or find things in the night sky without adult participation and assistance.

Beyond that, the size of the telescope is another important consideration. If it's too small, the images it produces will be correspondingly small, faint and hard to find. And if it's too large, the child won't be able to reach the eyepiece without standing on a ladder.

The ideal telescope for a 10-12-year old is likely to be a 3" refractor, a 4-1/2" reflector or a 6" Dobsonian reflector. All of them are capable of producing excellent images, and none of them places undue physical demands on the child or parent.

Then do it the way that **Dwight Harness** and other FRACsters have done it over the years: take the 'scope and your son or daughter outside and either learn together or teach the child how to operate the telescope and navigate the night sky. Either way, the experiences and bonding that takes place may foster a love for astronomy that carries through or beyond the youngster's teenage years.

*The only report we received re the recent Deerlick picnic weekend in late May came from ex-FRAC member **Robert Hall** of Warner Robins, Ga. Rob writes, "The event was interesting. About 50 attendees and food galore. I thought the public observing field was somewhat underdeveloped. It needs more grading to make it smoother and flatter, and might need to be enlarged later. Some AAC members gave us a tour of their observatories at Deer Lick. They were really neat."

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Upcoming Meetings/Activities. Our clouded-out May Gordon College observing at Abbott's Farm has been rescheduled for 9:15 p.m. on **Thurs., June 23rd**. **Dr. Schmude** always brings a motorcade of 50-60 students, so we'll need a buncha telescopes.

To get to Abbott's Farm from, say, Hampton, come S on U.S. Hwy. 19/41 like you're going to Cox Field, but stay on the 4-lane past the Williamson Rd./Ga. Hwy. 362 exit. Go 19.1 mi. from Williamson Rd. on Hwy. 41 South – it eventually becomes Hwy. 341 – and turn left at paved Brent Road. Turn left into the driveway of the first house on the left.

With two New Moons in July – one on the 1st and the other on the 30th – we'll start and end the month with Cox Field observings. The first two will be on **Fri.-Sat., July 1st-2nd.** The others will be on **Fri.-Sat., July 29th-30th.**

Between those dates we'll hold our UGa-Griffin public lunar observing from 7-10 p.m. on **Fri., July 8th** on the lawn in front of the Flint Bldg. on the UGa-Griffin campus.

At 8:30 p.m. on **Mon., July 11th** and the same time a week later on **July 18th,** we'll conduct observings for youngsters at Camp Fortson in Hampton. Directions to the site will be e-mailed prior to the observings.

We'll return to the UGa-Griffin campus at 7:30 p.m. on **Thurs., July 14th** for our club meeting at 7:30 p.m. in Rm. 305 of the Flint Bldg. Our speaker will be **Steve Knight,** whose "Frankenscope" talk was postponed in June so he could tell you about our resurrected **Georgia Sky View 2012.**

Between now and our Aug. club observings on Aug. 26th-27th, we'll try to get Kurtz Rock ready for use as an observing site.

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<u>An Interview With Award-Winning Prof. Stargazer</u>

The professor grinned broadly as he held aloft the large trophy.

"I couldn't wait to show it to you," he said, "especially since some of your members have questioned my ability in the past. This proves that I know what I'm talking about!" He handed it to ***Dwight Harness,*** *who read aloud the inscription:*

"PROFESSOR THEOPHILUS STARGAZER, THE WORLD'S GREATEST ASTRONOMER. PRESENTED BY THE ASSOCIATION OF PLANETARY AND LUNAR OBSERVERS."

"Pardon me, Professor," **Larry Higgins** said. "Shouldn't it be the Association of Lunar and Planetary Observers, and not the other way around? I mean, it's called 'ALPO,' not 'APLO.'"

"Lemme see that!," cried the professor, reaching for the trophy. It fell to the ground and shattered into tiny pieces during the exchange.

"Oops!," said Dwight.

"It's okay," the professor replied. "I have another one just like it in the trunk of my car. I should have checked them more carefully when the lady at the trophy shop called and said they were ready." Then, realizing what he just said, he stammered, "I mean – uh, that is…"

With that shaky beginning, our interview began.

Bill Kurtz: How big do stars get, Professor?

Prof. Stargazer: Betelgeuse, a red giant in *Orion*, is over 800 million miles in diameter – so large that, if it were where the **Sun** is, it would fill all the space between the Sun and **Saturn**. **Kirstie Alley** of "Dancing With the Stars" used to be that big, but she went on a diet.

Frank Hiller: People are saying that, based on stuff like an ancient Mayan calendar, an alignment of the planets and a sudden reversal in Earth's polarity all coming together on December 21, 2012, the world will end on that date. Is it true?

Prof. Stargazer: Let me be frank, Frank. (I've always wanted to say that.) No, it isn't true. The 2012 doomsday prediction is an urban myth based on misinformation and, in some cases, downright lies. It's sort of like politicians' mudslinging campaigns, only the doomsday folks are doing it to sell books, not to get elected.

I, on the other hand, have used scientific methods to calculate precisely when the world will end – and it's NOT on 12/21/2012, either!

Roger Brackett: When will it be, sir?

Prof. Stargazer: Based on my research -- which takes into account more than a million variables and rules out all other possibilities -- I can confidently predict that *The world will end when* ***Tom Moore*** *completes his Lunar Club pin requirements.*

Jim Roberts: That's not very specific, Professor.

Prof. Stargazer: Neither is Tom's observing schedule. He started working on his Lunar Club pin 13 years ago. Most people would have finished by now.

David Mitchusson: I have a question, sir. What happens to old stars when they run out of gas?

Prof. Stargazer: Some of them go supernova. Some cast off their outer shells of gases and become planetary nebulae. Some implode and become neutron stars or black holes. And some of them end up doing Golden Oldies tours or lounge acts in Vegas or Reno.

Curt Carroll: What is the most distant galaxy in the universe?

Prof. Stargazer: Our **Milky Way** is, to anyone at the other end of the universe.

Smitty: Okay, let's re-phrase the question, sir: How will astronomers know when they've found the most distant galaxy from us?

Prof. Stargazer: When they find one that telemarketers can't reach during mealtime. Are there any more questions? The trophy shop closes at 5 p.m.

Doug Maxwell: Here's one. There's **Einstein's** theory of relativity. The Big Bang theory. Quantum mechanics theories, black hole theories and star formation theories. Why are there so many theories in astronomy and so few facts? Is there *anything* -- even a single fact about the universe -- that astronomers agree is true beyond any possible doubt?

Prof. Stargazer: I doubt it. (Just kidding.) But that's a very good question, Doug.

Astronomers are what I like to call stay-at-home astronauts and time travelers. Using our telescopes as spaceships, we travel backward in time across the vast emptiness of space. We see **Andromeda Galaxy** as it was 2.2 million years ago, **Neptune** as it was four hours ago and the **Sun** as it was eight minutes ago. We study the past in order to understand the present and future universe. Most of what we know is based on guesswork and logic, like detectives studying clues at a crime scene. And that leaves plenty of room for disagreement.

There is, in fact, only one thing in mankind's entire recorded history that astronomers everywhere have agreed on.

Steve Bentley: And what's that, Professor?

Prof. Stargazer: That **Tom Danei** will be shopping for another telescope before the month is out. Tom goes through telescopes the way pork and beans go through **Larry Higgins.**

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Dark Skies

article by Larry Higgins and Bill Warren

The biggest problem facing astronomers in the U. S. today is light pollution. We're losing our dark skies, and the problem is increasing as our population grows by leaps and bounds. As urban areas expand, formerly dark sites experience a similar increase in sky glow at night. More people equals more light pollution. It's as simple as that.

The International Dark Sky Association (IDA) and others contend that people don't understand why dark skies are important. And while that statement undoubtedly is true, we think the problem goes deeper than that: *most people don't even know what a dark sky looks like!* In our combined 40+ years of experience, the only people who understand what dark skies look like are astronomers. Here's an example:

Several years ago, we were told of several "really dark sites" around Orchard Hill, a small rural community a few miles south of Griffin. So one dark night we drove down to Orchard Hill to investigate those sites, knowing what we'd find but hoping that somehow we'd be wrong.

We weren't.

What we found was dark skies, of course – unless we happened to look (a) north toward Griffin, where the dome of sky glow was higher and more intense than Atlanta's sky glow as seen from Cox Field; or (b) south toward Barnesville, home of Gordon College and about 2-1/2 times as many residents as Zebulon (which in turn lends its own sky glow to the west of Orchard Hill as well as to Cox Field).

So *Yes,* the skies were dark outside Orchard Hill, compared to your living room or downtown Atlanta. But they decidedly were *not* dark in terms of what astronomers need in order to find and observe extremely faint deep-sky objects in telescopes!

And that, folks, is why we're losing the battle of light pollution. Our population in the U. S. has more than doubled in the past sixty years, from 152 million people in 1950 to 308 million in 2010 -- and nobody but astronomers and burglars needs dark skies at night.

P.S.: There's an interesting little postscript to this saga, too. We'll form it as a trivia question:

Who in FRAC is most likely to complain about light pollution only when there's not enough of it?

The answer is, of course, **Stephen Ramsden,** who depends on the ultimate source of light pollution to show people the **Sun**, up close and personal.

Stephen says he got interested in solar astronomy because he had trouble seeing those faint fuzzies in the night sky. At mag. -28, the Sun presents no such problems. And unlike the **Moon** with its monthly phases, except for an occasional solar eclipse the Sun is always full.

Maybe all of us should become solar astronomers. You don't need dark skies for that.

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Below: **Alan Pryor's** stunning astrophoto of **M63** in *Coma Berenices* shows you why it bears the familiar nickname, **Sunflower Galaxy. Charles Messier's** assistant, **Pierre Mechain,** discovered this bright, tightly-wound, multi-armed spiral galaxy in 1779. It lies roughly 16 times farther from us than **Andromeda Galaxy,** i.e, 35 million light-years away.

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Upper Right-Hand Corner: Separated by just 11 arc-minutes, the spiral galaxy duo of **NGC 4754** (the bright fuzzy "star" to the lower left of center) and **NGC 4762** (the edge-on to the upper right of center) in the constellation *Virgo* offer a lovely contrast in spiral galaxies in the same field of view. From **yr. editor's** Herschel 400 observing notes for the pair: "NGC 4754 was small – 1' in dia. -- but clearly defined at 147x in my 10-in. Dob, a circular glow with a stellar core and brightness fading evenly to the edges." NGC 4762 was seen as "razor-thin, measuring 3' x 0.5' and elongated NNE-SSW, its central concentration bright and fading laterally to its edges."

Alan Pryor imaged this galaxy pair at yr. editor's request, and the results show that it was well worth the effort.

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Above: Following **Felix Luciano's** example in our June issue of the *Observer,* this month it's **Alan Pryor's** turn to showcase the beauty of **NGC 4565** in *Coma Berenices***.** In **yr. editor's** Herschel 400 observing notes he described 4565 as "a large, edge-on spiral galaxy with a prominent nuclear bulge, shaped like a fried egg. Extremely elongated NW-SE, dust lane faintly seen at 147x. Lovely, VERY bright by Herschel 400 standards even under a ¾ **Moon** with haze rising. Acclaimed to be the best edge-on galaxy in the sky and, measuring 10' x 1.5' in my 10-in. Dob, certainly the largest."

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