

# THE FRAC 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. FRAC website: [www.flintriverastronomy.org](http://www.flintriverastronomy.org).

Please notify Bill Warren promptly if you have a change of home address, telephone no. or e-mail address, or if you fail to receive your monthly *Observer* or quarterly *Reflector*.

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**Club Calendar. Fri.-Sat., Oct. 28-29:** JKWMA observings (at dark); **Thurs., Nov. 10:** club meeting (7:30 p.m. at The Garden in Griffin, public lunar & planetary observing before and afterward); **Fri., Dec. 2:** JKWMA observing (at dark); **Sat., Dec. 3<sup>rd</sup>:** Christmas party/dinner meeting (6:00 p.m. at Brian's (used to be Ryan's) Buffet Restaurant in Griffin.

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**Vice President's Message.** Dwight is out of town enjoying a well-deserved vacation in the mountains of east Tennessee, so I'll use his space to indulge in

one of my favorite pastimes, i.e., dumping on Microsoft.

Here's how bad I am with computers: My last computer had Windows 7, but I switched it to the earlier Windows 3 format because it was easier to use that way.)

I recently bought a new computer and had Windows 10 installed. It's infinitely more complex than 3, of course, and working with it has become an endless nightmare. (Dwight warned me, but I wouldn't listen.)

I understand that, in order to make megabuck\$ with each new version of Windows, Microsoft has to offer new features or else no one will buy it. But they also change the way that existing features work, and that's where I implode. Photos that I used to transfer from e-mails to the newsletter with ease are now as inaccessible to me as an audience with the pope. And I wonder: *Why? Shouldn't they be making their product easier to use?*

Well...No. Microsoft has a crew of computer gurus whose job it is to upgrade the existing Windows in exciting new ways for their newer version, and *simplicity* doesn't factor into the equation. The more changes they make, the better their product will be. Their thinking is, if you don't understand it, buy *Windows 10* (or *Microsoft 10*) for *Dummies!* But those books don't cover but a few of the 10,001 different things that can go wrong when you upgrade to the latest version.

*So here I sit, all broken hearted*, trying to make sense of changes that are unnecessarily complicated for someone like me. Frankly, I'd be more comfortable preparing the newsletter with a hammer, chisel and stone tablets.

Of course, I could always upgrade to Microsoft 16.

**-Bill Warren**

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**Last Month's Meeting/Activities.** A healthy turnout of fifteen members and a guest attended our JKWMA observings on Sept. 30<sup>th</sup> & Oct. 1<sup>st</sup>: **Dwight Harness & Venci Krumov** (both nights); **Alan Pryor; Felix Luciano & Truman Boyle** (Fri. night); and **Aaron Calhoun; Steve Hollander; Jeremy Milligan; Alan Rutter** and his guest, **Heather Simmons; Mike Stuart; Carlos Flores**; and **yr. editor** (Sat. night).

There was another pleasant surprise in store for us on Oct. 10<sup>th</sup> when **27** people showed up for our

meeting: **Aaron Calhoun; Truman Boyle; David Haire; Alan Rutter; Tom Moore; Angela Knight; Steven Hollander; Jeremy, Sarah, Emily & Delilah Milligan; Kenneth & Rose Olson; Dawn Chappell; Cynthia Armstrong; Carlos Flores; Venci Krumov; Dwight Harness; and yr. editor;** and guests **Jennifer Woods; Lynne Duncan; Bud & Joanne Horrell; Colward Woods; Charles Duncan; and Scot & Karen Snyder.** Most of our guests were homeowners at Sun City Peachtree). David and Steven received their Outreach certificates and pins, and the members voted unanimously for Dwight to pursue plans for a FRAC observatory at The Garden.

To complete an incredible month, we had a fabulous public observing on Oct. 21<sup>st</sup>. **Venci Krumov, Jeremy Milligan, Tom Moore, Truman Boyle, Steven Hollander** and **yr. editor** showed just about everything the fall night sky has to offer to an enthusiastic crowd of 40-50 home-schoolers and their parents. The children were polite, attentive and well-behaved, and the parents – well, before we left we were given a thank-you note, gift cards from Chik-Fil-A – and oh!, by the way, \$64 in cash for the club.

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**This ‘n That .** From our “**Members Helping Members**” Dept.: Shortly after becoming an astronomer, **Aaron Calhoun** bought an Orion Starburst 4-1/2” tabletop reflecting telescope.

Starting small is always a good idea for beginners. First, a small telescope is easier to handle than a large ‘scope while you’re learning the ropes as an observer. And second, if you later discover that you aren’t (or can’t be) as involved in astronomy as you thought you’d be or would like to be – or if you upgrade to a larger ‘scope -- you haven’t laid out a lot of money for a telescope that won’t be used any more.

In Aaron’s case, he was – and is – deeply involved in astronomy. He’s working on a couple of A. L. observing programs, so it was natural for him to want to upgrade to a larger ‘scope. He bought an 8-in. Dob that he uses at every opportunity.

Thus the question arose: *What to do with a 4.5-in. Dob that is gathering dust at home?* Aaron’s solution was to ask **Jeremy Milligan** if he thought his daughters **Emily** and **Delilah** would like to have it. They wanted it, so Aaron gave it to them at the

October meeting. Thanks, Aaron; we’re sure your ‘scope will be put to good use.

**\*A message from yr. editor:** If you’ve been in FRAC awhile, you’re probably aware of **Phil Sacco’s** wonderful observing article, “Howl-een Fun.”

Recently, I suggested to Phil that, if he was willing to grant me co-author status, I’d expand the article to include even more spooky stuff, edit everything else to distinguish between what can be seen on Halloween night and what can be seen at other times of year, and submit the revised article to *The Reflector* for publication in next year’s Sept. (Fall) issue. Phil agreed, and when we were satisfied that the article was ready I sent it to **Ron Kramer**, the *Reflector’s* editor. Ron notified me immediately via return e-mail that our “Howl-een Fun” article will appear in the Sept. 2017 issue. As he put it, “I think our readers will have a howl of a lot of fun with this!”

You can see the revised article on our FRAC website.

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**Upcoming Meetings/Activities.** With the **Moon** phases playing tricks on us, we won’t have any JKWMA observings scheduled in November. We will, however, have observings on either side of the month, i.e., on **Fri.-Sat., Oct. 28<sup>th</sup>-29<sup>th</sup>** and again on **Fri., Dec. 2<sup>nd</sup>**.

Between those dates, our club meeting will be at 7:30 p.m. on **Thurs., Nov. 10<sup>th</sup>** at The Garden in Griffin, with public lunar & planetary observing before and afterward. Our speaker will be **Dr. Richard Schmude**. His topic will be “Brightness Measurements of Venus.”

At 6:00 p.m. on **Sat., Dec. 3<sup>rd</sup>**, we’ll hold our annual Christmas party/dinner meeting at Brian’s (it used to be Ryan’s) Buffet Restaurant in Griffin. We’ll have a bunch of door prizes to give away. These get-togethers are always a barrel of fun, and the food is better now than it was before the ownership changed hands. So bring the family, win some door prizes and leave with a full stomach and a smile on your face.

**Directions to Brian’s.** Coming south from, say, Hampton on U. S. Hwy. 19/41, stay on the 4-lane past the Hardee’s/McDonald’s stoplight in Griffin. Go two stoplights farther and turn right. Brian’s

parking lot is on the immediate left, just beyond the movie sign.

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**The Sky in November.** Three planets -- **Venus** (mag. -4.1), **Saturn** and **Mars** (both of them mag. 0.5) will be visible after sunset in November. Venus will be waxing gibbous (i.e., its disk growing larger) and rising higher in the SW sky as the month progresses. Saturn will set shortly after the **Sun** goes down, which means that you won't see it from JKWMA Site #1. As the month begins, Venus and Saturn will be three finger-widths apart in the SW sky.

**Neptune** (mag. 7.9) and **Uranus** (mag. 5.7) can be seen in binoculars or a telescope in the S sky on any November evening if you know where to look. (Both of them are tiny; they will appear almost stellar in binocs.) Neptune's blue-gray disk will lie about 2 pinky-widths held against the sky SW of the 4<sup>th</sup>-mag. star **Lambda Aquarius**. (Any star chart will show you where to find that star.) The blue-green disk of Uranus will be a little more than one pinky-width E of 5<sup>th</sup>-mag. **Zeta Pisces**. (Again, use a star chart to find it.)

**Jupiter** (mag. -1.7) will be a "morning star" all month; it will rise 2-3 hrs. before sunrise.

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### Calhoun's Corner: Pegasus

by Aaron Calhoun

In Greek mythology, **Pegasus, the Flying Horse** and his brother **Chrysaor** sprang from drops of blood from the severed head of **Medusa**, the Gorgon, after her fatal encounter with **Perseus**. Chrysaor vanished from mythology, but *Pegasus* has been a constellation since the 2<sup>nd</sup> century a.d. Long before that, however, it was recognized as a horse by the ancient Mesopotamians.

The modern version of Pegasus is not a complete horse. We see it as the Flying Horse's midsection, forelegs, neck and head. So here's what I think: when Pegasus was placed in the sky, its hindquarters fell back to Earth to become the first politicians.

**Stars.** The four stars that form Pegasus's midsection are known as **The Great Square of**

**Pegasus.** One of them, **Alpheratz (Alpha Andromeda)**, is shared by *Andromeda* and Pegasus. Before Andromeda became a constellation, its brightest stars formed the hind legs of Pegasus, joined together at Alpheratz at the NE corner of the Great Square.

From 97 light-years away, Alpheratz is 200 times brighter than the **Sun**.

**Scheat (Beta Pegasus)** forms the NW corner of the Great Square, where the forelegs of Pegasus join its midsection. Light from Scheat takes 196 yrs to reach us. It is 4 times the size of the Sun, but it will get much larger: it has just begun to turn into a red giant star.

**Algenib (Gamma Pegasus)** is located at the SE corner of the Great Square, where Pegasus's tail would be if he had one. Algenib shines with the light of 4,000 Suns, and that light takes 330 years to reach us. Algenib has a companion star lying just 14 million mi. from it. That's less than 1/3 as far away from Algenib as **Mercury** is from the Sun.

**Markab (Alpha Pegasus)** forms the SW corner of the Great Square where Pegasus's neck is located. At 133 light-years away, Markab is 4.3 times as large as the Sun and shines 205 times as bright.

**Enif (Epsilon Pegasus)** is the Flying Horse's nose. It is 670 light-years from us and has a brightness of 6,700 Suns. At 150 times the Sun's size, if Enif took the place of our Sun it would be as big as the whole constellation of Pegasus!

**Deep Sky Objects.** First, of course, there is the beautiful globular cluster **M15**. Lying 33,000 light-years from Earth, M15 spans 175 light-years in dia. It is one of the brightest globular clusters in the night sky, its core thick with stars that give the cluster a bluish tint.

**NGC 7331.** Although small in our telescopes, this nearly edge-on spiral galaxy is bright and beautiful. It lies 47 million mi. away and, with a dia. of 128,000 mi., it is slightly larger than the **Milky Way**.

**Stephan's Quintet (NGCs 7317, 7318A, 7318B, 7319 & 7320).** This extremely faint galaxy quintet near NGC 7331 is a real challenge for experienced observers: they lie together in an area that telescopically is smaller than your thumbnail! Assuming that you're skilled enough to find them on a very dark, clear night, the question becomes: *How many of them can you see?* They range in brightness from mag. 12.9 to 13.6, and are located

about 2-1/2 thumb-widths SW of NGC 7331 in a low-power telescope's field of view.

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## The Care and Feeding of a Newsletter

article by **Bill Warren**

When **Ken Walburn**, **Larry Higgins** and I met to form an astronomy club, it was Larry who suggested that we name our newsletter *The Flint River Observer*. We knew from the start that it would be FRAC's most important link to its members, because back then the Internet was still in its infancy – a toy, not a tool – and Facebook, iPhones, etc., were years away in the future.

Our first issue (Mar., 1997) was 3 pp. long, and we sent it out in hard copy. Every month, Larry and I would go to his office in McDonough and run off enough copies for all the members, then I'd staple them together – the copies, not the members – address them by hand, affix stamps and mail them out. The *Observer* expanded to a 5-pp. format when I learned enough about astronomy and observing to write about it.

In Jan., 2003 we decided to send out the newsletter via e-mail, and the *Observer* expanded to its present 6-pp. format. That decision resulted in a substantial savings for the club and endless headaches for me because I knew next to nothing about computers. In those days – and continuing even today -- **Tom Moore** was my 911 emergency operator for computer assistance. I'm sure I taxed his patience to the limits, but without Tom's constant guidance and help the *Observer* could not have emerged from technology's dark ages.

For all but two of FRAC's nearly 20 yrs., I've served as its newsletter editor. **Felix Luciano** took over in 2004-2005 when I took an extended leave of absence, and he did a remarkable job. I'm sure, though, that Felix must have been relieved when I offered to take it back off his hands in 2007, because preparing and editing a newsletter is an endlessly complex and demanding task. Like a newborn baby, it requires constant attention. It's a year-round task, and there are no months off. Felix made it look easy, but it never is.

The *Observer* took a giant leap forward when, in Aug. 2010, Tom showed me how to put photos in the newsletter. If that seems like a ho-hum event to you -- did you see *2001: A Space Odyssey*? Well,

if the black obelisk at the beginning of the movie had been a computer, one of those hominids grunting around it would have been *me!* (As if to prove it, Word 10 balked at my plan to put four of **Alan Pryor's** and **Felix Luciano's** photos in this newsletter. I sent the unfinished newsletter to Tom, and he inserted the photos and sent it back to me.)

So now we have photos in the *Observer*.

It's a pretty good newsletter. Still. . . As **Dirty Harry Callahan** observed, "A man's gotta know his limitations." I've hidden mine all these years and no one has complained – but it's there. And that's where **you** come in.

At this point, for our newsletter to improve it needs at least an occasional article from one of FRAC's tech-oriented members about telescopes, eyepieces, equipment, etc. That's not my strong suit. When members talk tech stuff at our meetings or observings, I nod wisely every now and then like I know what they're talking about. But I seldom say anything because I seldom have anything intelligent to add to the conversation.

If you're willing to help out here, you can tell us about new equipment you've bought – what it is, how it works, etc.; or you can tell about new equipment on the market, or how to perform such basic tasks as cleaning eyepieces, collimating a telescope or finderscope, using a GoTo or PushTo 'scope, etc. The possibilities are endless. I'll give you all the help you need in polishing what you've written.

I've said it many times before, *all of us are like flowers: we're budding geniuses and blooming idiots in different areas*. Many of you know things about astronomy and the equipment you use (or are interested in) that the rest of us would like to know about. The *Observer* and FRAC will reap the benefits if you'll share your knowledge with us.

It's not that I mind writing articles for the newsletter, or that I'm trying to lay some of the responsibility for filling these monthly 6 pp. on you. As I write this, I'm also working on another Special Edition that is almost finished. So it's not as if I'm suffering from writer's block. I'd just like to see the newsletter include more material from other members. I think you would, too.

"Calhoun's Corner" is one example of what I mean; so are the observing reports and photos that **Alan Pryor** and **Felix Luciano** send me, and the responses to my **Mars** question that **Aaron**, **Phil**

**Sacco, Dawn Chappell and Steven Hollander** sent me.

Over the years, I've wished (but never asked, except in the case of the Mars question) that readers would send me their reactions to topics and issues I've written about. I always read the "Letters to the Editor" in *Sky & Telescope* and *Astronomy*, and if you subscribe to either of those magazines I bet you enjoy reading them, too. I'd love to do that with the *Observer*.

I consider the *Observer* to be "my" newsletter because I contribute so much to it, but in reality it's *your* newsletter as a member of FRAC. I underscore that fact by putting your name in **bold** print every time it appears in the newsletter. I want you to be proud of yourself and the newsletter, and seeing your name in it – and possibly your thoughts as well – is the best way to do it.

If you think you have nothing important to say that your fellow club members would find interesting – well, think about it: Did you enjoy reading what Aaron, Steven, Dawn and Phil had to say about a manned Mars Mission? I did. And if you did, too, why on earth would you think that their opinions are more important than yours? The difference was, they let themselves be heard. Aaron's response was only five sentences long; it wasn't as if I was asking him to write a book.

The next time you read something in the newsletter that is thought-provoking or interesting, take a couple of minutes to respond to it. As long as what you say is related to astronomy or FRAC, it will go in the newsletter.

Like your vote in the upcoming presidential election, your thoughts and opinions matter, but only if you express them.

We'll be looking forward to hearing from you.

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### **An Interview with the Protesting Professor**

When a group of FRACsters finally caught up with kindly old Prof. Stargazer, he was sporting more bruises than an overripe banana. We asked him about it.

"I decided to stage a one-man FRAC protest against light pollution in downtown Atlanta last weekend," he replied. "I made a sign, picked out a streetcorner and held up the sign. Immediately, people began attacking me. They destroyed my

sign and pounded on me like a judge demanding order in the court."

"What did the sign say?," **Steven Hollander** asked.

"That's what puzzles me," the professor replied. "It didn't really say anything at all. I was protesting light pollution on behalf of our club, so my sign said "FRAC Lives Matter."

And with that the interview began.

**Alan Pryor:** What's the difference between magnetic north and true north?

**Prof. Stargazer:** Gee, don't you guys in FRAC know *anything* about astronomy? Magnetic north is magnetic. And true north doesn't tell lies.

**Alan Rutter:** How do the clouds know when we're having an observing?

**Prof. Stargazer:** The same way telemarketers know when you're having dinner.

**Jeremy Milligan:** Didn't you sign up to have telemarketers blocked?

**Prof. Stargazer:** The last time I signed up for anything, I spent three years in the Navy. When the recruiter said I'd see the world, I thought he meant from a mountaintop through a telescope.

**Smitty:** Really, Professor? Does the Navy spend much time on mountaintops?

**Prof. Stargazer:** Only when the water is real, real high.

**Tom Moore:** If galaxies are so big, why do they look so small in my telescope?

**Prof. Stargazer,** eyeing Tom suspiciously: Aren't you the guy who once asked me if the planets would appear closer if you observed them from the roof of your house?

**Tom:** Yeah, that was me. I thought it was a good question, but you looked at me like I was something you stepped in on the sidewalk. You never answered me -- and you haven't answered this question, either.

**Prof. Stargazer:** I'll answer both of your questions with a question of my own, Tom: When you wake up in the morning, do you find a little pile of sawdust on your pillow?

**Tom:** Yeah, I've noticed that. What causes it?

**Prof. Stargazer:** Gravity.

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**Below: DWB 35/41**, a cloud of ionized hydrogen gas (known as *H II* – pronounced “H-two”) regions in the constellation *Cygnus*. (Photo by **Felix Luciano**.) Felix writes, “This image was taken at JKWMA on 30 Sept.-1 Oct., 2016. **DWB 41** is at the center, with many finger-like structures extending to the left. Several very large dark nebulae and H-alpha emissions can also be seen.” The entire area shown in Felix’s image is a region of intense star formation.

Commenting on Felix’s image of DWB 35/41, **Alan Pryor** wrote, “Nice work. Love the dynamic range of the dust cloud structures.” We couldn’t agree more, Alan!



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**Below: NGC 246 (Skull Nebula)**, a planetary nebula in *Cetus*. Photo by **Alan Pryor**. What better way could there be to celebrate Halloween at JKWMA on Oct. 28<sup>th</sup>-29<sup>th</sup> than to find **Skull Nebula**? It’s fairly large and bright, and its bubble shape is best seen in an 8-in. or larger telescope using a narrowband filter or an O-III filter.

Skull Nebula is one of the 17 spooky targets in **Phil’s** and **Bill’s** “Howl-eeen Fun” article.



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**Below: NGC 7023**, an emission nebula in *Cepheus*. Photo by **Alan Pryor**. **NGC 7023** is a Herschel II target, and Caldwell 4 in the observing list compiled by England’s legendary **Sir Patrick Caldwell-Moore**.



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**Below: Cygnus X**, a massive star-forming region. Photo by **Felix Luciano**, who writes: “Here is a little something from the old backyard a few weeks ago. Cygnus X is an area of optically visible H II regions with lots of H-alpha emission and dust... Toward the center of the image are several reflection nebulae that do not show up in my H-a image; **NGC 6914** is one of them... So many objects, so little time.”



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