

THE FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT
RIVER ASTRONOMY CLUB

An Affiliate of the Astronomical League

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Officers: President, **Dwight Harness** (1770 Hollonville Rd., Brooks, Ga. 30205, 770-227-9321, rdharness@yahoo.com); Vice President, **Bill Warren** (1212 Everee Inn Rd., Griffin, Ga. 30224, warren7804@bellsouth.net); Secretary, **Carlos Flores**; and Treasurer, **Truman Boyle**.

Board of Directors: **Larry Higgins**; **Jessie Dasher**; and **Aaron Calhoun**.

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Club mailing address: 1212 Everee Inn Rd., Griffin, GA 30224. FRAC web site: 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* from the A. L.

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Club Calendar. Thurs., Apr. 9: FRAC meeting/lunar observings (7-10 p.m., The Garden in Griffin); **Fri.-Sat., Apr. 17-18:** Joe Kurz observings (Site #3, at dark).

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President's Message. I need to thank a lot of people this month for a number of reasons, so I'll get started:

First, thanks to **Phil Sacco** for his recent

mythology talks. The room was filled to overflowing on all three occasions, with a total of 77 members and visitors attending. Phil did a great job, and we learned a lot about the mythology of the night sky.

Due to Phil's back-to-back talks in Jan. and Feb., we postponed our 2015 elections and FRAC's 18th birthday party until our March meeting.

With one exception – **Roger Brackett**, who stepped down as treasurer to become our comptroller and grant coordinator -- FRAC's 2015 cast of officers and board members is the same as last year: I'm your president; **Bill Warren** is vice president; **Carlos Flores** is Secretary; and **Larry Higgins**, **Jessie Dasher** and **Aaron Calhoun** are your board members. I want to thank those gentlemen for their service and support, and for agreeing to serve for another year; I want to thank Roger for his two years as treasurer (which included getting us non-profit and tax-exempt status); and I want to thank **Truman Boyle** for stepping up to replace Roger as treasurer in 2015.

Thanks, too, to Truman, Carlos, **Felix Luciano**, **Ron Yates** and **Joe Auriemma** for helping to put together **Georgia Sky View 2015**. Without their assistance the revival of **GSV** would still be a pipedream.

Our speakers – **Dr. Richard Schumde**, **Stephen Ramsden**, Phil, Ron, Felix and Truman – were great. Thanks, guys, we needed you more than ever this year. (I'm especially proud that our speakers were in-house: a club with that much depth is something to be proud of.)

I also want to thank the Rock Ranch (especially **Adam Pugh**) for their hospitality and making us feel right at home.

I know all this must sound like an Oscar winner's acceptance speech, but the truth is, it takes a lot of work by a lot of people to keep an astronomy club running smoothly; and it took the support of everyone in FRAC for us to have a successful **Ga. Sky View 2015**.

At times I've been kidded (mainly by Bill and my wife **Betty**) about being long-winded. They're wrong, of course – I just like to talk – but I also know when enough is enough. So I'll stop here and let Bill get on with the newsletter.

-Dwight Harness

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Vice President's Message. There's one very

deserving person our president failed to mention in all his thank-you's, so I'll do it: Thanks, **Dwight**, for all you've done and are doing for FRAC. Your capable leadership is just what the club needs, and I can't imagine anyone doing a better job than you're doing. Except for one little thing – our bylaws – I'd have nominated you as President For Life at the March meeting.

Seriously, though, you've made it look easy – and that's the best compliment you're ever likely to get from me or anybody else in FRAC.

The same goes for **GSV 2015**: Despite the poor weather, our star party ran as smoothly as a Rolex watch, due to the work you and your committee put into the preparations. You made it look easy.

So here's a huge **THANK YOU!** on behalf of everyone in FRAC for leading us so well, and for reviving our star party and making it the best it possibly could be under the conditions.

-Bill Warren

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Last Month's Meeting/Activities. **David O'Keefe** and yr. editor conducted an indoor presentation and outdoor observing for about 20 Southern Crescent Tech students and passersby on Feb. 24th. **Dwight Harness** and yr. editor helped boy scouts with their astronomy merit badges at a series of workshops at Second Methodist Church in Griffin in March. Our three other public observings were cancelled due to the weather.

Fourteen attendees – **Dwight Harness; Ron Yates; Aaron Calhoun; Ally Liggons, Korbin Tiller & Alicia Parker; Steven "Smitty" Smith; Tom Moore; Larry Higgins; Olga & Carlos Flores; Truman Boyle; Erik Erikson;** and yr. editor – enjoyed **Dr. Richard Schmude's** excellent and very interesting talk at our Mar. meeting on changes in brightness of the planet **Uranus**. Officer elections were held, and we celebrated FRAC's 18th birthday – not 19th, as our cake proudly proclaimed – with a post-meeting party.

It takes more than the threat of rain to mess up a FRAC star party. The 20 people who attended **Georgia Sky View 2015** – **Larry Higgins, Mark Davenport, Brendon O'Keefe, Aaron Calhoun, Truman Boyle, Joe Auriemma, Dwight & Laura Harness, Smitty & Robert Smith, Orren Haynes, Erik Erikson, Vicky Walters, Gil Shilcutt, yr. editor and speakers Ron Lyles, Felix Luciano, Truman Boyle, Stephen Ramsden and Dr. Richard Schmude** – had an absolutely splendid

time, listening to a group of incredible speakers who gave the performances of their lives. We enjoyed the catered meal on Sat. evening, and we enjoyed not having to spend a couple of hours at the conclusion of the star party cleaning up. No one complained about the weather – well, not much – because we had a barrel of fun just being together, meeting new friends and enjoying old friends. We got in some observing Fri. night – Aaron won the Messier Marathon prize – but Sat. night was clouded out. (See Smitty's statement about astronomers on p. 5.)

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This 'n That. Here's a hale and hearty "WELCOME TO FRAC!" to our newest member, **Mark Davenport** of White, Ga. (It's near Cartersville.) You're gonna like Mark: he joined the club recently and attended our **Ga. Sky View** at the Rock Ranch, and he's a really nice guy, easy to talk to and fun to get to know.

*Ex-FRACster **Rich Jakiel** has an article, "Backyard DSLR Imaging," in the April, 2015 issue of **Sky & Telescope** (pp. 66-69).

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Upcoming Meetings/Activities. Our club meeting will be from 7-10 p.m. on **Thurs., Apr. 9th**, at the Garden in Griffin, with lunar and deep-sky observing before and after. Our program will be "The Star Factory Inside the Eagle Nebula," a segment from the 12-part dvd *Experiencing Hubble: Understanding the Greatest Images of the Universe*. Narrated by Northwestern University Professor of Physics and Astronomy **David M. Meyer**, the dvd will show and tell us all that we need to know about the Hubble Space Telescope's most famous image, the "Pillars of Creation."

Our club observings will be held at Joe Kurz Wildlife Management Area (JKWMA) Site #3 on **Fri.-Sat., Apr. 17th-18th**. Those dates are ideally suited for astrophotography and deep-sky observing, since the **New Moon** is on April 18th.

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Views of Ga. Sky View 2013

Smitty: "Here's a big thank-you to all who organized, worked and spoke at our FRAC star party. Though the weather didn't cooperate, I had a great time! My youngest son, **Robert**, really

enjoyed rubbing elbows with all my astronomer friends, too. Please send the Rock Ranch a thank-you letter from our club, and make sure to thank the two fine ladies who served our great Saturday meal.”

Felix: “I wasn’t able to camp out this time around, but I had a great time at the meetings on Saturday. All of the presentations were excellent and very informative, and the food was a hit as well. **Dwight**, you did a great job putting together **GSV 2015**. Thanks!”

Here’s what you do at star parties when the clouds roll in:

Joe Auriemma and Robert flew Joe’s model planes Sat. afternoon. Cows kept knocking over the direction signs that Dwight put out to guide attendees to the Covered Wagons site. A skunk somewhere nearby made his presence known, and pork & beans at the Sat. meal guaranteed that **Larry Higgins** and **yr. editor** would do likewise. **Stephen Ramsden**, a dedicated solar astronomer, poked light-hearted fun at deep-sky observers, referring to us as “nighttime sissies.” (Larry’s response: *Nighttime sissies? At least we aren’t afraid of the dark!*) **Phil Sacco & Gil Shilcutt** loved the “coffin” that **Brendon O’Keeffe** brought his telescope in. Brendon, an astrophysics major at Columbus State Univ., showed us a clever and very realistic model of **Comet 67P Churyumov-Gerasimenko** that he built. **Ron Yates, Truman Boyle & Aaron Calhoun** helped **yr. editor** play Trivia Crack, and Phil & **Vicky Walters** played an unusual -- and totally incomprehensible -- variation of chess. (Phil didn’t get to deliver his night-time mythology tour of the heavens, but it didn’t matter: having 24/7 comedians like Phil and Larry around ensured that things wouldn’t get dull. And they didn’t.)

About the speakers: Ron & Felix did a marvelous job of making sense of astrophotography basics for those of us who, like yr. editor, aren’t exactly sure which end of the camera you point at the sky. Truman treated us to an unusual but delightful look at how our brains process the visual information they receive. **Dr. Richard Schmude’s** talk, a variation of his talk at our Mar. meeting, was nevertheless as fresh and fascinating as he’s ever done. And Stephen Ramsden’s talk on solar astronomy showed why he is in such great demand as a speaker and solar observer: his passion for the **Sun** was evident throughout, and his ability to

simplify the Sun’s complexities literally brought the Sun down to Earth for us.

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Prof. Stargazer’s Simplified Pronunciation System

by Prof. Theophilus (pronounced: the awfulest)
Stargazer

“Arcturus” is his other name –
I’d rather call him “Star.”
It’s very mean of Science
To go and interfere

-**Emily Dickinson** (1859)

It’s not bad enough that astronomy is so complex that nobody but me understands it. Or that professional astronomers toss out mysterious terms like *parallax*, *parsecs*, *precession*, *protostar* and *pulsar* like candy thrown from parade floats. Amateur astronomers face a more basic problem.

Consider the following constellations: *Caelum*; *Camelopardalis*; *Canes Venatici*; *Circinus*; *Coma Berenices*; *Delphinus*; *Equuleus*; *Eridanus*; *Horologium*; *Monoceros*; *Ophiuchus*; *Piscis Austrinus*; *Reticulum*; and *Vulpecula*. You probably recognize most of them – but how do you pronounce them?

(Answer: It doesn’t matter. However you pronounce them, somebody will say it’s wrong. Don’t listen to them, though: they’re wrong too.)

But that’s only the tip of the iceberg. About 2/3 of the stars have Arabic names that look like alphabet soup. **Albireo** (Al-BEER-ee-oh) is one of the easiest to pronounce : it’s a pretty double star, and FRAC members like to show and talk about it at public observings. But try these stars on for size: **Zubenelgenubi**; **Zubeneschamali**; and **Rasalgethi**. How on earth do you pronounce those tongue-twisters, or others like **Fomalhaut**, **Vindemiatrix**, **Sualocin** or **Kaffaljidhma**?

Actually, most of them are easy to pronounce, as you’ll see.

After years of researching astronomy pronunciations, I realized that, if you can’t spell Kaffaljidhma, you aren’t likely to pronounce it, either. That led me to a very important conclusion: If I didn’t pay my gambling debts, I was going to wind up with more missing parts than a jigsaw puzzle in a tornado. (Just kidding, although my bookie was dead serious about it.)

Actually, I decided that *there has to be an easy way to pronounce names that look like Scrabble tiles spilled on a tabletop*. So I came up with what I modestly refer to as “Prof. Stargazer’s Incredibly Brilliant Method of Simplified Pronunciation.” Basically, it states that *Beyond the first two or three letters, all confusing astronomy terms and names are pronounced exactly alike!*

Here’s how it works. I’ll use Camelopardalis as an example.

1. Put your hand near your mouth and say “Cam.”

2. Without pausing, wipe your hand slowly across your mouth and mumble five or six random syllables. (They don’t have to sound like you think the word might be pronounced.) Presto! You’ve just pronounced Camelopardalis.

Of course, if you think you know where that constellation is located – although no one knows for sure – you may be able to avoid the problem by pointing toward that part of the sky and saying, “That constellation right there.” And if someone asks, “What constellation is that?,” you can always fall back on my easy pronunciation system. It works equally well for almost any difficult astronomy name or term.

If you can say “Zoo,” “Ras,” “Vin” or “Kaf” and mumble the rest behind your hand, you can pronounce Zubenelgenubi, Zubeneschamali, Rasalgethi, Vindematrix or Kaffaljiddma. Your only problem will be working them into your conversation, since the last time anyone referred to any of them by name was around 1846. (And even then it was unclear whether the speaker was referring to a star, clearing his throat or ordering a meal in a foreign restaurant. [“I’ll have the Zoo(mumble), with a side order of Kaf(mumble).”])

But what about Fomalhaut and Sualocin? They are exceptions to my rule, because their first three letters are as hard to pronounce as the rest of the word. Is it “FOAM” or “FAHM”? “SWAH” or “Soo-WAH”? (Answer: Who cares? Those stars are as useless as a finderscope on binoculars. Just do what I do and pretend that they don’t exist.)

Anyway, I’ve saved the best (or worst) for last.

Having mastered my system, you should be ready for my ultimate pronunciation challenge:

1. Anyone with a grain of sense knows that 24 hours is a *day*. But that’s too simple for professional astronomers. Why use a three-letter

word when there’s a 12-letter word for the same thing?

Pronounce *nychthemeron*.

2. There’s a term for the straight-line alignment of any three gravitationally-bound objects (e.g., stars, planets or solar and lunar eclipses). Professional astronomers like me use the term to show that we’re smarter than you are.

Pronounce *syzygy*.

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TOTAL SOLAR ECLIPSE U. S. A. 2017

article by Steven “Smitty” Smith

A total solar eclipse will grace portions of the U. S. on Monday, Aug. 21, 2017. Although this event is still two years away, let me say that while I’ve viewed a number of partial and annular solar eclipses over the years, I’ve seen only one that was total. I’m looking forward to this one, and I hope you are too. So here’s a question for us to consider:

As a club, do we want to travel not a huge distance to be in the path of totality? Around 2:30 p.m. on that date, portions of Tennessee, South Carolina and north Georgia will be in this path. If anyone knows of a good location for viewing the eclipse in those areas, please speak up. The closer to the centerline of the path, the longer the duration of totality will be. In Clayton, Ga., totality will last 2 minutes, 34 seconds; in Toccoa, Ga. it will be 2m, 25s; and in Helen, Ga., 1m, 40s. (Of course, the entire eclipse will last longer than that from beginning to end.)

Solar filters are required during the partial phases before and after totality, but during totality naked eye and unfiltered views through your telescope are safe. FRAC may want to stock up on solar glasses before the event, and members may also want to pool their money and purchase a large sheet or two of filter material to make solar filters for their ‘scopes and binoculars.

It is also a good idea to get some experience in solar viewing before the eclipse. I’ve earned the Astronomical League’s “Sunspotter” certificate and pin, and it’s not hard to do. It does not require a large ‘scope, and it’s something you can do on your lunch breaks. Sunspotter is one of the few A. L. observing programs you can complete in one month’s time. Have a little *fun* with your **Sun!**

Another question for us to consider is: *If we organize an event, should it be a public “sidewalk”*

type or a “club only” observing with any guests that may be there? A public event has the advantage of us probably staying at a hotel for a night. Telescope time during totality would be limited, though; you might get only an occasional peek through your own ‘scope while allowing others to look through it. A private event would let us view it constantly throughout the brief period of totality.

One possible site would be Black Rock Mtn. State Park in north Ga., where totality will last for 2m, 36s. Camping is allowed there, so we could hold an informal FRAC star party one or two nights beforehand and view the eclipse on Monday. That’s just one option.

It’s important for us to remember that “eclipse chasers” travel all over the world for these rare events. If we want to do something, the time to act is *now*. Once the astronomy magazines have major articles on the upcoming event, it will probably be too late for us to get hotel or camping reservations. (*Editor’s Note: The lady at Black Rock Mtn. SP says the earliest that camp sites can be reserved is 13 months in advance.*)

Of course, a negative aspect is that, after two years of planning, the eclipse could be clouded out. But hey, we’re *astronomers* – we roll with the punches! Observing is always weather dependent. The good side is that there are no volcanoes nearby, so we won’t have to sacrifice anyone...

At this early date there is already a lot of information about this eclipse. In writing this article, I used info from www.eclipse2017.org. The site also offers three links for commercial sites that are already selling “Eclipse 2017” items such as tee shirts, hats, pins and maps.

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The Edge of the Sky

book review by Bill Warren

Our universe is endlessly beautiful, fascinating and mysterious. But it is also endlessly complex. Astronomy is, in the words of **Eric Betz**, “a science that frightens off many otherwise inquiring minds.” (*Astronomy* [Feb., 2015], p. 17.)

“Try to explain the universe to someone with no background in astronomy or physics,” Betz says. “(Then) imagine if you could strip away all the intimidating terms in astronomy...and describe only

the ideas without ever using language more complicated than a children’s book.

“That’s the tactic **Roberto Trotta** takes in his new book, *The Edge of the Sky* (Basic Books, 2014),” Betz continues. “(Trotta) attempts to tell the story of our universe using only the 1,000 most commonly used words in the English language. The result is a refreshingly short – 68 pp. – (description) of the cosmos that is both physically small and fun to read. The book makes use of large font and chapters of only a few pages.”

Three examples of the book’s simplified format:

1. Since the word *universe* does not appear among the 1,000 most-often-used words in the English language, Trotta’s book is sub-titled *All You Need to Know About the All-There-Is*.

2-3. Two other words that do not appear on that list are *telescope* and *Earth*. In Trotta’s book, a telescope is a “Big-Seer,” and the Earth is “Home-World.”

I recently ordered *The Edge of the Sky* from amazon.com, and after reading it I offered it as a door prize at **Ga. Sky View 2015**. (**Aaron Calhoun** won it.) The new terminology takes some getting used to, but there’s a glossary at the back that tells what his terms mean. I just went back and forth from the text to the glossary until I got used to the terms.

Once you get used to the new terminology, Trotta takes you through such complex concepts as dark matter and dark energy with such simplicity that you’ll understand what he’s talking about even if you don’t know nuclear fission from bass fishing.

The author -- who, by the way, is an astrophysicist at the university level -- does for the universe what **Richard Schmude** does for the planets in his talks to FRAC: he brings them down to our level, rather than demanding that we try to understand them at his level.

If you’re interested in purchasing Trotta’s brilliant little book, you can buy it for just a few bucks from amazon.com. It’s well worth the money.

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The War of the Worlds That Wasn’t

article by Bill Warren

Eighty years ago, there were no TVs, computers, iPhones, Facebook, Twitter or video games. Most families sat around at night listening to the radio.

On Sunday evening, October 30, 1938, a young actor and director named **Orson Welles** created a widespread panic with his radio adaptation of **H. G. Wells's** epic sci-fi novel *War of the Worlds*. The program, which was presented as a Halloween episode of *The Mercury Theatre of the Air*, ran nationally at 8 p.m. on the CBS radio network.

Unlike the two later movie versions of *War of the Worlds*, Welles's radio show used a series of fictional news bulletins and interviews interrupting a simulated music program to tell the story. The bulletins and action grew increasingly intense as the show went on, and by the 40-min. mark of the hour-long program hundreds of thousands of listeners across the nation were convinced that the U. S. was being attacked and destroyed by an alien invasion force from Mars.

That might seem silly or naïve from our perspective 76 years later – but it wasn't. Read on.

The last 20 min. of the program was set a few weeks in the future and told of the Martians dying off from exposure to Earth's bacteria. But few people were still listening to the show by then. Thousands of people in New York and New Jersey (where the invasion took place) packed up their cars and fled; thousands of others tied up the telephone lines, demanding information and advice from the police or attempting to call relatives or loved ones to see if they were safe. The real-life traffic jams, accidents and inability to communicate by phone made it even easier to believe that the alien invasion was real, and not a radio drama.

Listeners had been warned at the beginning of the program – and periodically throughout it as well -- that it was a dramatization, not a real event. So why did so many people believe it? There were two reasons.

1. The program was running opposite an immensely popular comedy show featuring ventriloquist **Edgar Bergen** and his dummies **Charlie McCarthy** and **Mortimer Snerd**. *War of the Worlds* had no commercials, so when listeners switched over to it during Bergen's first commercial break – or when other listeners tuned in late to the *War of the Worlds* broadcast -- they missed the early warning that the program was only a fictional drama. Those listeners, not knowing what to believe, assumed that they had tuned into a real-life event that was unfolding as they sat listening in horror. They crowded into the streets by the thousands, trying to figure out what was going on.

2. The program was extremely realistic, and terrifying. The “announcer” – an actor -- repeatedly referred to real people and real places. (The setting and site of the invasion was moved from 19th-century England to “today” in Grover's Mill, an actual village near Trenton, N. J.) Scientists, policemen, military personnel and hysterical residents – all actors, of course -- were interviewed, and listeners heard the sound effects of cannon fire, people screaming and emergency sirens blaring in the background. As the show progressed, the news bulletins became more hysterical and frequent, announcing that people were dying by the thousands, and panic broke out. *The alien invaders were winning, and the U. S. was being destroyed by creatures from Mars!*

When people learned that they had been the victims of a very realistic Halloween prank, their panic turned to outrage. Welles apologized for having scared them so badly, and he later went on to become a leading actor, director and filmmaker in Hollywood. His 1941 movie *Citizen Kane* is considered by many people to be the best movie ever made.

It wasn't until nearly forty years later that anyone ever succeeded in frightening the American public the way Orson Welles did in his radio production of *War of the Worlds*. In 1975, director **Stephen Spielberg** released *Jaws*, a movie about a great white shark terrorizing swimmers at a beach resort in New York.

Think about it: Have you seen *Jaws*? And if so, when's the last time you went swimming over your head in the ocean? If you can't remember when it was, perhaps you'll understand why hundreds of thousands of people were frightened into hysteria in 1938 by a radio broadcast about a martian invasion.

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Above: star trails by **Brendon O'Keeffe**