

# THE FLINT RIVER OBSERVER

## NEWSLETTER OF THE FLINT RIVER ASTRONOMY CLUB

An Affiliate of the Astronomical League

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Please notify **Bill Warren** if you have a change of home address, telephone no. or e-mail address.

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**Club Calendar. Fri.-Sat., Apr. 1-2:** Cox Field observing (at dark); **Mon., Apr. 11:** UGa-Griffin lunar observing (7-10 p.m.); **Tues., Apr. 12:** Pre-K observing, 7 p.m., Orrs Elem. School (Griffin); **Thurs., Apr. 14:** FRAC meeting: 7:30 p.m., Rm. 305 of the Flint Bldg. on the UGa-Griffin campus; **Thurs., Apr. 21:** Gordon College observing (9:15 p.m., Abbott's Farm south of Barnesville, Ga.); **Sat., Apr. 23:** Bluebirds & Bluegrass Arts & Crafts Festival (9 a.m.-4 p.m., Dauset Trail Wildlife Center).

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**President's Message.** The "Journey to the Stars" dvd we watched at the March meeting may or may not have answered a question I've often wondered about.

In my recent 3-part article series, "The Trivia Question That Grew" (*The Observer*, Dec. '10-Feb. '11), I glossed over the problem, hoping you wouldn't notice the omission. Other writers have done the same thing because they didn't know the answer, either. Here's the problem:

About 11 billion years ago, the **Sun** formed out of a dense cloud of gases and dust that was left over from an earlier supernova explosion. That protosun became a star when it developed gravitational attraction sufficient to (a) draw in the gases around it, and (b) compress them to the point where hydrogen atoms fused to create helium and other elements.

What you may have wondered – and what I certainly didn't know – was, *What was the mass that attracted those nebular gases?* There had to have been something substantial enough out there to have exerted a gravitational influence on the nebulosity around it – but what was it? It certainly wasn't particles of dust.

The answer, according to the dvd, was **dark matter.**

With that answer, everything seemed to fall into place, since by definition dark matter contains mass, even if we don't know what it's composed of. Current estimates are that 90% of the universe is dark matter. So that was a perfectly logical answer.

Except...

If dark matter attracted the gases that surrounded it and formed the Sun, *what happened to the dark matter?* It didn't go anywhere; shouldn't it still be part of the Sun's core? And if so, why haven't astronomers detected it?

One of three answers is correct: either (1) dark matter *isn't* the material that generates star formation; (2) dark matter is so far beyond our present understanding as to remain undetectable at the Sun's core; or (3) the dark matter changed into something recognizable at the Sun's core as a result of the nuclear fusion process.

So which explanation is correct? We'll eventually find out because astrophysicists are moving steadily closer to discovering the nature of dark matter. And if such a question has occurred to someone as astronomically illiterate (pun intended) as I am, it certainly has occurred to astrophysicists as well.

Finally, thanks to everyone who has re-upped for another year with FRAC. Your faith in the club more than compensates for the disappointment that FRAC presidents have always felt when members have decided, for whatever reason, not to re-up. As I've often reminded you, FRAC can't be a truly fun club without "u".

**-Bill Warren**

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**Last Month's Meeting/Activities.** **Mike Stuart, Tom Moore, Dwight Harness, Larry Higgins** and **yr. editor** showed wonders of the night sky to about 50-60 2<sup>nd</sup>-graders, their parents and teachers at Jackson Road Elementary School on March 1<sup>st</sup>. The weather was blessedly warm -- unlike our last two observings at the school, which were so cold that we wouldn't have been surprised to see polar bears roaming the campus -- and the sky was as clear as a mountain lake. At the conclusion, the teachers gave us a Thank-You card containing \$25. We tell them every year that they don't have to pay us, it's a service that FRAC performs for free, but they always take the high road with a small monetary donation. Classy folks, those Jackson Roaders.

We had 18 members at our March meeting: **Steve & Betty Bentley** and **Erin Mills; Dwight & Laura Harness; Bill Kurtz; Tom Moore; Cynthia Armstrong; Charles Turner; Carlos Flores; Larry Higgins; Jessie Dasher; Tom Danei; Steven "Smitty" Smith; Erik Eriksen; Chris & Bagitta Smallwood;** and **yr. editor**. We watched an excellent dvd, "Journey to the Stars," and gorged ourselves on Betty's superlative pound cake and cookies. If Steve were as good at astronomy as Betty is at cooking, he'd be on the staff at Palomar Observatory.

We voted unanimously at the March meeting for FRAC to donate \$200 in club funds to the Charlie

Bates Solar Astronomy Project. (**Stephen Ramsden**, who heads CBSAP, is presently involved in a fund-raising drive to purchase a new, larger and more fuel efficient vehicle to carry his solar telescopes and equipment to the 70+ solar observings and presentations he conducts every year.)

The total cost of the van -- which will be called "SUN.S.P.O.T. (for SUN Specific Public Observing Truck)" -- is around \$25,000.

We wish the club could have given more, Stephen, but **Steve B.** recently looted FRAC's treasury to pay for his and **Betty's** new beachfront vacation villa on Bora Bora in the south Pacific. (We're kidding, of course -- but we *aren't* kidding about our admiration for Mr. Ramsden and his remarkable solar outreach program.)

Ten members, including **Bill Kurtz** and his grandson, **Scout Phillips**, attended our March UGa-Griffin lunar observing. Other attendees included: **Sam Harrell & Julie Avery; Larry Higgins; Tom Moore; Charles Turner; Steve Knight** (with his recently purchased dirt bike); **Jessie Dasher; Dwight Harness;** and **yr. truly**. The crowd was rather sparse, but the camaraderie we shared was worthy of a tent-service revival meeting.

On Mar. 16<sup>th</sup>, **yr. editor** used our new dvd, "Journey to the Stars," as the basis for a talk for the Science Club at Crescent Elementary School in Griffin. On the following day, he gave two "chart talks" about constellations for five 2<sup>nd</sup>-grade classes at Orrs Elementary, also in Griffin.

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**This 'n That.** Our deepest sympathies are extended to **Charles Turner**, whose mother died recently after an extended illness. You're a good man, Charles, respected and admired by all who know you -- and that's the finest compliment your mother would ever have wanted.

\***Jerry & Bev Williams** -- a super couple we've seen far too little of in recent months -- are gonna be absent a bit longer, it appears. They're about to embark on a one-month trip to Australia and New

Zealand – assuming, of course, that the Pacific tectonic plates have finished shifting for awhile.

**\*An Open Letter from Stephen Ramsden:**

“FRACsters, I am very grateful for your donation to the S.U.N.S.P.O.T. fund. It was totally unexpected, and I want you to know how much I appreciate you guys for doing so. Very thoughtful.”

**\*FYI: A Free Star Party!** The Tennessee Spring Star Party (TSSP) will be held on the weekend of April 29-May 1 at Fall Creek Falls State Park near Pikeville, Tenn. (The state park is about 50 mi. north of Chattanooga.)

They write, “As in the past, the star party is free to attend. There will be all night observing Fri. & Sat. nights (the public is invited until 10 p.m.) as well as speakers/presentations during the day on Sat. Those attending are responsible for their food and lodging.

“Fall Creek Falls State Park will be offering a star party package for those wishing to stay at the inn. The price is \$148 (plus tax) for two nights (double occupancy) plus two breakfasts for Sat. & Sun. morning. Call 1-800-250-8610 for reservations. Ask for the star party package. (You can see the site at <http://www.tennessee.gov/environment/parks/FallCreekFalls>.)

“For more information, contact **Lloyd Watkins** at [watkinsk@comcast.net](mailto:watkinsk@comcast.net) or **Allen Ball** at [tmscoper@gmail.com](mailto:tmscoper@gmail.com). You can also go to the Cumberland Astronomical Society website and click on the TSSP 2011 link.”

**\*Aliens Among Us?** Knowing **Dan Pillatzki, Ken Walburn** and **Dwight Harness** as we do, we’ve always suspected that there is alien life from outer space here on Earth. Now, according to NASA astrobiologist **Richard Hoover**, it appears that we may have been right all along.

In an article published in the Mar. ’11 issue of *Journal of Cosmology*, Hoover says he sliced open some rare meteorite fragments, studied the contents under an electron microscope and found bacteria-like “indigenous fossils” that “are not Earthly contaminants but are the fossilized remains of living organisms which lived in the parent bodies of these

meteors...The implications are that life is everywhere, and that life on Earth may have come from other planets.”

NASA officials were quick to distance themselves from Hoover’s findings. “This is a claim that Mr. Hoover has been making for years,” said **Carl Pilcher** of NASA. He pointed out that the meteors, which fell to Earth 100-200 years ago, had often been handled by humans over the intervening years, “so you would expect to find microbes in these meteorites.”

*(But if you handle a grapefruit in a grocery store, we might ask, are you contaminating the seeds inside it? –Ed.)*

“NASA cannot stand behind or support a scientific claim unless it has been peer-reviewed or thoroughly examined by other qualified experts,” said another NASA scientist, **Paul Hertz**. He pointed out that Hoover’s article was not peer-reviewed after being submitted to the *International Journal of Astrobiology* in 2007.

So why hasn’t the paper been peer-reviewed or its evidence examined in the past four years? Either Hoover didn’t want his evidence to be examined closely, or else his peers dismissed his findings as spurious without bothering to examine the evidence. Either way, someone – Hoover or his peers – was guilty of what author and astronomy buff **Phil Plait** calls “bad astronomy.”

To give Mr. Hoover’s research a boost, we should tell him about Dan, Ken and Dwight. They’re far more convincing evidence of alien life among us than anything in a meteorite or supposedly hidden away in Top Secret storage at Area 51 in Nevada.

\*In his editorial “The truth? You can’t handle the truth!” in the April ’11 issue of *Astronomy Magazine* (p. 8), editor **David Eicher** provides the perfect postscript to **yr. editor’s** article last month about astrology. Eicher writes that, since it was snowing outside during the total lunar eclipse on Dec. 20<sup>th</sup>, he decided to follow the event online. He punched in CNN.com on his laptop.

Big mistake.

Rather than consulting astronomers to analyze and explain the eclipse, the CNN.com story featured quotes from two astrologers. One of them explained

that “A lunar eclipse disrupts vibrations from the Moon, letting people’s intuition work more freely and allowing them to receive information that the logical left brain doesn’t normally get. With Mercury simultaneously in retrograde... now is the time for reflection and introspection.”

The other astrologer was no more helpful, stating that “Full Moons are times of great stress on the planet...Symbolically, it’s a time of letting go of something from the past.” (*Yeah, like astrology. –Ed.*)

Mr. Eicher was enraged at such slipshod pseudoscience. “What,” he asked, “has happened to science literacy in the United States? At the same time that CNN runs rah-rah clips about how science and technology are critical to the future of the United States, they (promote) nonsense in place of substance.” He bemoans CNN.com’s “lunging for cheap ratings rather than credible reporting” and adds, “Doesn’t anyone care to know the truth about the world and how the universe actually works?...No wonder the United States is raising a new generation of young people who are unprepared for science.”

Bravo, Mr. Eicher! (And boos and hisses to CNN.com.)

Here’s an apt analogy for you: *Astrology is to astronomy what quackery is to medicine.*

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**Upcoming Meetings/Activities.** We’ll start off April with Cox Field observings on **Fri.-Sat., Apr. 1st-2<sup>nd</sup>**. (The New Moon is on the 3<sup>rd</sup>.)

Our UGa-Griffin lunar observing will be from 7-10 p.m. on **Mon., Apr. 11<sup>th</sup>**, the night of the 1<sup>st</sup> Quarter Moon.

On the following evening, **Tues., Apr. 12<sup>th</sup>**, we’ll conduct a 7 p.m. observing for the Pre-K classes at Orrs Elem. School in Griffin. It’ll be a rather brief observing due to a 1<sup>st</sup> Quarter Moon and light pollution at the school, but we’ll be happy to have you join us.

To get to Orrs from, say, Hampton, come S on U. S. Hwy. 19/41 like you’re going to Cox Field, but get off the 4-lane at Ga. Hwy. 16 (the Griffin-Newnan exit). Turn left onto Hwy. 16, cross over the 4-lane

and turn left at the 2<sup>nd</sup> stoplight. Go one block and turn left at the 4-way stop. Turn right at the 1<sup>st</sup> road, and then turn left into the Orrs campus. We’ll set up our ‘scopes near the gym.

Three nights later, our FRAC meeting will be at 7:30 p.m. on **Thurs., Apr. 14<sup>th</sup>**, in Rm. 305 of the Flint Bldg. on the UGa-Griffin campus. Our speaker, **Jessie Dasher**, will address a potentially controversial topic in strictly non-confrontational terms, i.e., *How does a man of faith reconcile the apparent inconsistencies between scientific and faith-based approaches to astronomy and the universe?*

Please understand, Jessie won’t be trying to influence anyone’s views. We won’t pass around an offertory plate (although we *will* have our door prize fund box available as usual) -- and he won’t serve communion or call for converts to profess their faith or join the church. That wasn’t **yr. president’s** goal in asking Jessie to address this topic, and he understands that.

As you already know if you heard Jessie’s talk about the Martian moons **Deimos** and **Phobos** last summer, he is an excellent speaker. Our April program promises to be both fascinating and entertaining, and we hope you’ll want to enjoy it with us.

At 9:15 p.m. on **Thurs., Apr. 21<sup>st</sup>**, we’ll conduct an observing for **Dr. Schmude’s** Gordon College students at Abbott’s Farm, south of Barnesville off U.S. Hwy. 341 South.

To get there from, say, Hampton, come south on U. S. Hwy. 19/41 like you’re going to Cox Field, but stay on the 4-lane past the Williamson Road/Ga. Hwy. 362 exit. Go 19.1 miles 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 1<sup>st</sup> house on the left.

On **Sat., Apr. 23<sup>rd</sup>**, FRAC will set up an astronomy booth from 9 a.m.-4 p.m. at the Bluebirds & Bluegrass Arts & Crafts Festival at the Dauset Trail Wildlife Center. We’ll talk with hundreds of passersby about FRAC and astronomy, and show them the **Sun** through solar filters. We’d love to have you join us. Entertainment will consist of watching **Steve Bentley’s** reaction to the snake exhibit next door.

To get to Dauset Trail from, say, Hampton, come S on I-75 to Exit 205 (Ga. Hwy. 16, the Griffin-Jackson exit). Turn east toward Jackson, 10 mi. ahead.

Stay on Hwy. 16 through Jackson, and go straight on U. S. Hwy. 23/Ga. Hwy. 42 where Hwy. 16 branches off to the left. Then, a couple of miles ahead on 23/42, bear right on Hwy. 42 where Hwy. 23 goes straight. Go past both Indian Springs State Park entrances at Flovilla on Hwy. 42.

About 100 yds. beyond the 2<sup>nd</sup> ISSP entrance on the right, turn right at the flashing light at Mt. Vernon Church Road. That road goes to Camp McIntosh a mile ahead, but instead of bearing to the right to go to the camp, stay on Mt. Vernon Rd. as it curves to the left. Dauset Trail will be a mile or so ahead on the right.

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## A TRIVIA NUT MEETS HIS MATCH IN LIBRA

By Bill Warren

As you well know, I'm nuttier than a scoop of butter pecan ice cream.

Specifically, I'm a trivia nut, and I wear the title proudly. I've prepared three astronomy trivia quizzes and contests over the years. My present trivia concern involves the spring constellation *Libra*.

Here's a question from one of those quizzes: *What is the only zodiac constellation that is neither human nor animal?*

The answer is, of course, *Libra*, the Scales. (The word *zodiac* comes from the ancient Greeks; it means "circle of animals.")

Many of the constellations came to us from ancient arabs who, as astrologers, were the world's first astronomers. When they noticed that one of the zodiac constellations was a set of scales, not an animal, they tried to make *Libra* the "claws" of *Scorpius* (the Scorpion) in order to make it an all-animal zodiac. (*Libra* lies just NW of *Scorpius*.) It didn't work, though, since the scorpion already had claws: the three stars that form the crossbar at the top of **J**-shaped *Scorpius*.

Lying W and NW of the Milky Way, *Libra* contains numerous faint galaxies but not much in the

way of open clusters, nebulae or globular clusters. It also contains a trivia challenge that not one astronomer in 100 would answer correctly on a bet:

*Spell the familiar names of the stars **Alpha** and **Beta Librae**.*

There are two reasons why you'd win that bet. First, those stars' names are anything but familiar. And second, both names look like they were formed from a bunch of Scrabble letters spilled on the floor.

If you think you're hot stuff for knowing that **Alpha Orionis** is spelled B-e-t-e-l-g-e-u-s-e and not B-e-e-t-l-e-j-u-i-c-e – well, you ain't seen nothin' yet!

*Alpha Librae* is *Zubenelgenubi* (pronounced: ZOO ben ell jih NOO bee), and *Beta Librae* is *Zubeneschamali* (pronounced: ZOO ben esh uh MAHL ee).

The names are Arabic. *Zubenelgenubi* means "the Northern Claw," and *Zubeneschamali* means "the Southern Claw," in both cases referring to the Scorpion and not the Scales.

*Zubenelgenubi* shines at mag. 2.75, and is about 65 l.y. away. Its actual luminosity is about 25 times that of the **Sun**.

*Zubeneschamali* is mag. 2.61, lies about 140 l.y. away, and its actual brightness is about 145 times that of the Sun.

According to **Robert Burnham** (*Burnham's Celestial Handbook*, Vol. 2), white *Zubeneschamali* has often been described by observers as "greenish" or "pale emerald" in color.

"Modern observers," Burnham wrote, "generally agree that the only stars which appear definitely green are the close companions to red stars such as **Antares**... If *Beta Librae* appears truly greenish – which each observer must decide for himself – it is the only bright single star which does so." (p. 1106)

The two stars form the NW half of the kite-shaped trapezoid of stars that define the constellation *Libra*.

The first time I ever heard of *Zubenelgenubi* or *Zubeneschamali* was when I watched the PBS tv show "Jack Horkeimer: Stargazer" for the first time. He wound up that 5-min. segment by saying, "With names like that, doesn't it make you want to go out and find them *right now*?!"

By the way, here's a secondary trivia question that many of you may already know the answer to:

Since the constellation is Libra, why are the two brightest stars in it referred to as Alpha and Beta Librae?

(The answer: In referring to specific stars within constellations, the genitive, or possessive, case is used. Alpha Librae translates into “Libra’s alpha star.”)

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## AN INTERVIEW WITH PROF. STARGAZER

*(Prof. Stargazer seemed strangely preoccupied when a group of FRACsters interviewed him recently. He explained that he and his wife were getting a divorce on grounds of incompatibility. “She doesn’t like my income,” he explained, “and I don’t like her patibility.”*

*“How many times are you going to tell that stale old joke?” we asked him.*

*“I don’t know,” the professor replied. “How many times are you going to fall for it?”*

*The interview went downhill from there.)*

**Smitty:** Here’s a warmup question to get you started, Professor. What is an exoplanet?

**Prof. Stargazer:** The last time I was asked that question, Smitty, I tried to get away with saying that it’s a planet composed of tic-tac-toe letters. But that didn’t work, so I’ll try again.

To understand the term *exoplanet*, you need to understand the word’s roots. So let’s take them in reverse order:

A “planet” is a heavenly body.

“Oh!” is what guys shout (among other things) when they see heavenly bodies, especially at the beach.

An “ex” is a has-been.

So an *exoplanet* is a place where old guys stand around shouting and whistling at pretty girls.

**Cynthia Armstrong:** But wouldn’t that make the Earth an exoplanet?

**Prof. Stargazer:** The older I get, the more I think so. Next question?

**David Mitchusson:** I have one, sir: Why do barred spiral galaxies have bars?

**Prof. Stargazer:** The bars serve an important function, namely, giving the galaxy’s inhabitants somewhere to go so they won’t have to drink at home.

**Bagitta Smallwood:** Can you explain string theory to us, Professor? **Stephen Hawking’s** explanation wasn’t very clear in *A Brief History of Time*.

**Prof. Stargazer:** As you know, Bagitta, string theory is a very complex cosmological topic, but I’ll try to simplify it so you can explain it to your husband **Chris**.

Basically, string theory refers to the quantum mechanics theory that, if you pull on a string long enough, your sweater will unravel.

**Tim Cunard:** What do you think of radio astronomy, Professor Stargazer?

**Prof. Stargazer:** Too many commercials.

**Dan Pillatzki:** If refracting telescopes bend incoming light waves and reflecting telescopes reflect them, aren’t both ‘scopes bending light? Can you reflect light without bending it?

**Prof. Stargazer:** You need to get a hobby, bro, you’ve got too much time on your hands.

**Stephen Mann:** As the greatest observer of the night sky since **Galileo**, Professor, do you have a personal philosophy of observing?

**Prof. Stargazer:** I certainly do, Steve, and I’m happy to share it with you. I call it my “Andromeda Imperative.”

It takes the light from Andromeda Galaxy more than two million light-years to reach us. The least we can do is go outside and see it. Otherwise, it made the trip for nothing.

Does anyone have any other questions?

**Tom Moore:** I do, sir. (The last time I said that, **Cathy’s** dad was holding a shotgun.)

Anyway, here’s my question: I can understand Andromeda’s being two million light-years away, Professor. What I can’t understand is, with the universe being such a big place, how does that light know where to find us?

**Prof. Stargazer:** Maybe it uses GoTo technology.

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