

# THE FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT  
RIVER ASTRONOMY CLUB

An Affiliate of the  
Astronomical League

**Vol. 17, No. 12      February, 2014**

**Officers:** President, **Dwight Harness** (1770 Hollonville Rd., Brooks, Ga. 30205, 770-227-9321, [rdharness@yahoo.com](mailto:rdharness@yahoo.com)); Vice President, **Bill Warren** (1212 Everee Inn Rd., Griffin, Ga. 30224, [warren7804@bellsouth.net](mailto:warren7804@bellsouth.net)); Secretary, **Carlos Flores**; Treasurer, **Roger Brackett** (686 Bartley Rd., LaGrange, GA 30241, 706-580-6476, [rdb487@yahoo.com](mailto:rdb487@yahoo.com)).

Board of Directors: **Larry Higgins; Mike Stuart; and Jessie Dasher.**

Facebook Coordinators, **Jessie Dasher** and **Laura Harness**; Alcor, **Carlos Flores**; Webmaster, **Tom Moore**; Program Coordinator/Newsletter Editor, **Bill Warren**; Observing Coordinators, **Dwight Harness, Larry Higgins & Bill Warren**; NASA Contact, **Felix Luciano**.

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

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**Club Calendar. Fri.-Sat., Jan. 31-Feb. 1:** JKWMA observings (at dark); **Thurs., Feb. 13:** FRAC meeting (7:30 p.m., The Garden in Griffin); **Fri.-Sat., Feb. 28-Mar. 1:** JKWMA observings (at dark).

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**President's Message.** Since I forgot to say this last month, I'll say it now: I hope that each and every one of you had a very merry Christmas and a happy New Year; and I hope that 2014 will bring you and your loved ones good health, happiness and fulfillment beyond your wildest dreams.

We began 2014 by moving our meetings to a new location at The Garden, UGa-Griffin's botanical showcase. It was everything we hoped it would be and more.

Part of our motivation to move to a new site was a physical change in the main UGa-Griffin campus: they permanently closed off the old entrance that we've used for years on Experiment St. While we could have reached the Flynt Bldg. by another route, we preferred to go ahead and switch our meeting site to The Garden. It was a good move, and everyone seemed to enjoy our Jan. meeting at The Garden.

Now it's time for another important change in our format, and it's one you need to note very carefully:

**We will no longer conduct Friday night UGa-Griffin lunar observings.**

Instead, we'll hold both activities on our regular meeting nights at The Garden on the 2<sup>nd</sup> Thursday of every month, starting in March.

Here's how we'll do it:

The lunar observings will be from 7-7:30 p.m. and after the meeting. Early arrivals who want to participate in the pre-meeting observing phase can set up their 'scopes near the building at 7 p.m.

At 7:30 p.m., we'll go inside for the meeting. Visitors who arrive after 7:30 p.m. will be invited to attend the meeting.

During the meeting, members and visitors alike will be invited to stay for the post-meeting observing phase, which will begin immediately after the meeting is adjourned. Our regular lunar observing guidelines will apply: if it's cloudy, we won't conduct the post-meeting phase. But if the weather cooperates, members who stay will be credited with time toward achieving a Public Outreach observing pin or certificate. (Another nice feature of this plan is that members who, for whatever reason, don't get to observe will have the opportunity to spend awhile after the meetings seeing what's up in the sky that month.)

As I said earlier, *our public lunar observings will resume in March.*

Finally, I know you'll want to join me in welcoming our newest members, both of whom

joined the club at the Jan. meeting: **Tony Quinn**, of Stockbridge, and **Truman Boyle**, of Barnesville.

Guys, our members are friendly and outgoing, and we're always looking for ways to have fun in astronomy. Some of them are, like you, new to the club and/or astronomy; and some of them are seasoned veterans who know a lot about astronomy, telescopes, observing and/or astrophotography. We are ready, willing and able to help you with whatever problems you might be having.

Our goals as a club are, and always have been, to have fun, to educate the public about astronomy, and to teach our members what they need to know in order to enjoy astronomy and their time spent with us to the fullest. None of us has all the answers, of course – but we can work with you, and tell you where to find whatever answers you need that we can't supply.

**-Dwight Harness**

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**Last Month's Meeting/Activities.** Four stalwart souls braved 27° temps at JKWMA on Jan. 3<sup>rd</sup>: **Aaron Calhoun, Dwight Harness, Erik Erikson & yrs. truly.** Dwight brought the club's new Takahashi but couldn't stay long because he was under the weather (no pun intended). The rest of us stayed until about 9 p.m., but we got a *lot* of observing in, especially stuff that we don't often visit (e.g., open clusters **NGC 225, 436, 654** and **663** in *Cassiopeia* and **NGC 891**, the big edge-on galaxy in *Perseus*). **Jupiter** was the clearest we've seen it in at least a year.

A fine crowd of eighteen members, new members and guests attended our January meeting at The Garden. Attendees included: new members **Tony Quinn** and **Truman Boyle**; speaker **Felix Luciano**; members **Dwight Harness, Larry Higgins, Carlos Flores, Steve Bentley, Mike Basmajian, Tom Moore, Steven "Smitty" Smith, Aaron Calhoun, Erik Erikson** and **yrs. truly**; and visitors **Cathy & Wayne Gardner; Dawn Chappell & David Clay**; and **Steve Hyde**. Wayne is the gentleman who graciously arranged for us to hold our meetings in The Garden; Dawn is an ex-member who served as club secretary and was responsible for FRAC's receiving "Most For Its Size" honors in the A. L.'s Astronomy Day 2004 competition. (Not coincidentally, Dawn is also a

superb observer, having earned five A.L. observing pins.)

Felix gave a splendid "Show and Tell" presentation regarding his trip to Kitt Peak and its array of telescopes in Arizona. He also presented the club with a certificate of appreciation from NASA's Space Place for FRAC's "valuable contributions to its community in the areas of science, technology education, and inspiration."

Dwight brought the club's new Takahashi for everyone to ooh! and ahh! over, but he didn't set it up outside for observing. (That will come later at either the Feb. or Mar. meeting, and certainly after that on a regular basis.)

On Jan. 19<sup>th</sup>, **Larry Higgins & yr. editor** visited **Dwight** to try out the Takahashi in Dwight's backyard. We couldn't get the tracking motor to work – Larry thinks it might be burned out – but the view of objects such as **Jupiter, M36, M38** and the **Double Cluster** was everything you'd expect from such a high-quality instrument.

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**This 'n That.** Don't forget: *under FRAC's universal payment schedule, everyone's 2014 club dues are up for renewal in February*. The price is still a low, low \$15 per year; make your check payable to FRAC and give it to **Dwight Harness, Bill Warren** or **Roger Brackett** at the meeting or a Feb. observing, or send it to Roger at *686 Bartley Rd., LaGrange, GA 30241*.

\*On Jan. 12<sup>th</sup>, **Bill & Louise Warren** traveled to Athens, Ga., to watch the UGa Lady Dogs play basketball – and, not coincidentally, to share a few hours with one of our club's charter members, **John Wallace**.

John is one of FRAC's all-time finest observers, with four A.L. observing pins. He and his wife **Heidi** moved to Athens a number of years ago to be near their children and grandchildren, but John has retained his FRAC membership ever since. He hasn't changed at all, and he has high hopes that one of his young granddaughters will be an avid astronomer one of these days.

**\*Have the Winter Blahs Got You Down?** Here's the solution: *Attend one (or both) of the upcoming Florida star parties at which **Katie Nagy (Cathy & Tom Moore's** lovely and extremely*

*talented daughter) will be speaking in late Feb.-early March.*

As you doubtless know (because we mention it at every opportunity), Katie is the Head of Astronomy Education for the Smithsonian Air and Space Museum in Washington, D. C. Katie will be a featured speaker at the **30<sup>th</sup> Annual Winter Star Party 2014** held on Big Pine Key, FL on **Feb. 23-Mar. 2, 2014**, and again at the **11th Annual Dark Sky Festival** in Harmony, FL on **Fri.-Sat., Feb. 28<sup>th</sup>-Mar. 1<sup>st</sup>.**

The Winter Star Party is one of the premier astronomy events in the southeast. It is held in the Fla. keys, with hundreds of attendees annually. The registration fee for the 8-day event is \$125, and camping is \$85. The WSP is sponsored by the Southern Cross Astronomical Society; for more information about the star party, contact them at [registrars@scas.org](mailto:registrars@scas.org).

The Harmony Dark Sky Festival is sponsored by the South Florida chapter of the International Dark-Sky Assn. (IDA), and is located in Palm Beach County in south Fla. Admission is free. For more information, go to <http://www.harmonyfl.com/Amenities/dark-sky-festival>.

\*Not one, but *two* giants of American astronomy have passed away.

On Dec. 28<sup>th</sup>, **Halton C. Arp** died in Munich, Germany at age 86. Seventeen days later, on Jan. 14<sup>th</sup>, **John Dobson** died in Burbank, CA at age 98.

**Halton Christian Arp.** Dr. Arp's area of expertise was peculiar galaxies – galaxies that exhibit characteristics that are inconsistent with traditional spiral or elliptical shapes.

While working with the big telescopes at Mt. Palomar and Mt. Wilson in California, in 1966 Arp published his milestone book, *Atlas of Peculiar Galaxies*, with photos and analyses of the visual characteristics of 338 irregular galaxies. He classified the peculiar galaxies into five groups and numerous subgroupings: 11 unusual variations of *spiral galaxies*; five irregular variations of *elliptical galaxies*; 14 types of *amorphous* (formless) *galaxies*; eight classes of *double and multiple galaxies*; and *miscellaneous galaxies* – six galaxies that didn't fit into any of the other groups or subgroups.

The A. L. has an Arp Peculiar Galaxies pin program. To earn your Arp pin, you must observe any 100 of the 338 Arps. Eleven of the Messier

objects are Arps: **M66** (Arps 16 & 317); **M101** (Arp 26); **M77** (Arp 37); **M90** (Arp 76); **M51** (Arp 85); **M60** (Arp 116); **M49** (Arp 134); **M87** (Arp 152); **M32** (Arp 168); **M65** (Arp 317); and **M82** (Arp 337). If you've earned your Messier pin, you'll start the Arp program with 11 down, 89 to go.

**John Dobson.** Two innovations by Dobson ensured his status as American astronomy's greatest amateur astronomer. His "Dobsonian mount" (*The Observer*, Sept. 2013, pp. 5-6) made it possible for amateur astronomers of ordinary means to purchase or build huge telescopes; and in taking his telescopes onto the streets of San Francisco in the 1960s to show the night sky to passersby, Dobson created the concept of "sidewalk astronomy", a.k.a. *public outreach*. It's a simple but effective concept: going to where the people are, rather than waiting for them to come to you.

**The Arp-Dobson Connection.** Beyond their contributions to the advancement of astronomy, both Halton Arp and John Dobson questioned the validity of the Big Bang theory.

Dobson objected to the Big Bang theory because its proponents consistently ignore certain inconsistencies regarding how the universe came into being. Part of his objections were rooted in his religious background as a Vedantan monk; the rest involved questions regarding the physics underlying the Big Bang theory.

In Arp's case, he wasn't challenging the theory on religious grounds, but because it conflicted with what his research into peculiar galaxies showed him about red-shift theory as it relates to the Big Bang. And like Dobson, Arp's contributions to astronomy were so profound that few astronomers cared (or dared) to question his conclusions.

(As a p.s. to the passing of Dobson, we'll note that on Saturday, Mar. 8<sup>th</sup>, this year's ISAN (International Sidewalk Astronomy Night), a night when amateur astronomers worldwide will take their telescopes out to show people the wonders of the night sky, will be dedicated to the memory of John Dobson.)

\*While we're on the subject of **John Dobson**, here's a story that involves both a man of vision and a man with a serious lack of vision:

In mid-1969, Dobson submitted an article to one of the leading astronomy magazines about his new lazy-Susan-style telescope mount and how to build it. After reading Dobson's article, the editor

rejected it, saying that his techniques were not up to the magazine's standards and "could hardly lead to (the building of) satisfactory instruments in the kind most amateurs want in these large sizes."

\*We've mentioned this before, but here's a neat little observing challenge for you: on a clear observing evening, see if you can spot tiny **Sirius B**, the white dwarf companion of **Sirius (Alpha Canis Majoris)**.

The good news is, Sirius B -- a.k.a. the **Pup** because Sirius is the **Dog Star** -- lies a healthy 10" from Sirius, the brightest star in the night sky (and thus the easiest to find). Ten arc-seconds is a fairly wide separation for a double star, so the Pup is there if you can spot it. It shines at mag. 8.3, or about the brightness of **Ring Nebula**.

The bad news is, Sirius shines at magnitude -1.46, so it's easy to miss the Pup in the Dog Star's overwhelming glare. To find Sirius B, position Sirius just outside your high-power eyepiece field of view and look for the Pup as you move Sirius around the perimeter of your fov.

**Aaron Calhoun** and **yr. editor** used that technique last month at JKWMA. We thought we saw Sirius B occasionally amid the Dog Star's twinkling on a pretty good evening, but Sirius was still low in the southeastern sky when we were looking. It will be higher in February, increasing your chances of spotting the Pup.

Sirius B is about the size of the Earth; its density is so great that a teaspoon of its mass would weigh a ton on Earth. Sirius itself has roughly the same density as water. (So does our **Sun**, incidentally.)

Since Sirius/Sirius B lie 8.8 light-years from Earth, it's incredible that we might be able to see an Earth-sized object from that far away.

\*From our "**Your Tax Dollars at Work**" Dept.: According to a news item in the Feb. '13 issue of *Astronomy* (p. 14, by **Sarah Scoles**), scientists have discovered that dung beetles use light from the **Milky Way** as a navigational aid in pushing dung balls in straight paths. Perhaps a follow-up study will show that Wild Turkey helps them to navigate crooked paths.

**Dung Beetle #1:** Mama said to come straight home with supper. How do you know we're traveling in a straight line?

**Dung Beetle #2:** Don't you know anything about astronomy? All we gotta do is follow the Milky Way.

**Dung Beetle #1:** Hey, that's easy! I have one right here. I've been carrying it all day. Want a bite?

**Dung Beetle #2:** I don't think so.

**\*Trivia Questions.** #1: *There are 40 galaxies on the Messier list; what was the first one that Charles Messier listed?*

#2: *How many of the Messier objects are also known by a popular name (e.g., Crab Nebula)? How many of them can you name?* (Answers on p. 4.)

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When looked at closely enough, every galaxy is peculiar.

**-Halton C. Arp**  
*Atlas of Peculiar Galaxies* (1966)

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**Upcoming Meetings/Activities.** It's somewhat difficult to be excited about observing with the temperature standing at 25° as this is being written (with temps expected to plunge to a frosty 6° overnight), but we'll try.

We'll end one month and start the next with JKWMA observings at both ends of February.

First, of course, is **Fri.-Sat., Jan. 31<sup>st</sup>-Feb. 1<sup>st</sup>**. But then we'll wind up the month with returns to JKWMA on **Fri.-Sat., Feb. 28<sup>th</sup>-Mar. 1<sup>st</sup>**. All observings will begin at dark, which still comes early this time of year.

Between those dates, our club meeting will be held at The Garden at 7:30 p.m. on **Thurs., Feb. 13<sup>th</sup>**. We won't have a speaker; instead, after electing officers for 2014 and conducting our business agenda, we'll celebrate FRAC's 17<sup>th</sup> birthday with food and fellowship.

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**The Sky in February.** **Jupiter**, a month past opposition, will be nearly as large (42" in dia.) and bright (mag. -2.4) as it ever gets in our view. And like a restless insomniac, it will be up all night.

**Mercury** (mag. -0.5) will be up briefly after sunset at JKWMA on Jan. 31<sup>st</sup>-Feb. 1<sup>st</sup>. **Mars** (mag. 0) will rise around 11 p.m. on Feb. 1<sup>st</sup> and 9:30 on Feb. 28<sup>th</sup>. **Saturn** (mag. 0.5) will join the planetary parade at 1 a.m.

**Venus** (mag. -4.9) will be at maximum brightness in Feb., but will be a morning star.

The **Moon** will be up in various phases for most of the month – but as **Tom Moore** likes to point out, it's the same Moon as last month and nothing's changed.

Late Feb. and early March is a splendid time for observing the 14 *Virgo* galaxies on the Messier list before Spring brings the humidity that fogs up eyepieces. You'll have to stay up late because *Virgo* is in the eastern sky, but the opportunity to complete 13% of your Messier search should not be overlooked.

Meanwhile, the Winter sky holds 2 Messiers in *Cassiopeia* (**M52 & M103**); 2 in *Perseus* (**M34 & M76**); 1 in *Gemini* (**M35**); 2 in *Taurus* (**M1 & M45**); 1 in *Triangulum* (**M33**); 1 in *Canis Major* (**M41**); 3 in *Orion* (**M42, M43 & M78**); 1 in *Lepus* (**M79**); 1 in *Monoceros* (**M50**); and 3 in *Puppis* (**M46, M47 & M93**).

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**Answers to Trivia Questions on p. 4:** 1. The first galaxy that **Messier** put on his list of cometary look-alikes was **M31, Andromeda Galaxy**.

2. Twenty-five Messier objects have nicknames: **M1, Crab Nebula; M6, the Butterfly Cluster; M8, Lagoon Nebula; M11, the Wild Duck Cluster; M13, the Great Cluster; M16, Eagle Nebula; M17, Omega (or Swan) Nebula; M20, Trifid Nebula; M24, the Great Sagittarius Star Cloud; M27, Dumbbell Nebula; M31, Andromeda Galaxy or The Great Spiral Galaxy** (it was originally referred to as **The Great Nebula** before they knew it was a galaxy); **M33, Pinwheel Galaxy; M42, Orion Nebula; M44, Praesepe (or The Beehive Cluster); M45, The Pleiades; M51, Whirlpool Galaxy; M57, Ring Nebula; M63, the Sunflower Galaxy; M64, The Black Eye Galaxy; M76, the Little Dumbbell; M82, the Cigar Galaxy; M97, Owl Nebula; M99, Pinwheel Galaxy; M101, Pinwheel Galaxy; and M104, Sombrero Galaxy.**

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### A Chilly Conversation with Prof. Stargazer

For those who may not already know him, **Prof. Theophilus** (pronounced: *the awfulest*) **Stargazer** is the world's greatest living authority on

astronomy, cosmology and ways to lose weight without dieting or exercising. (His advice: Before stepping on the scales, inhale helium.)

When **Dwight Harness** and some of our new members caught up with the professor at JKWMA on a frigid winter evening, he was huddled around his telescope, which was on fire and blazing at mag. -16. That bizarre scene formed a natural starting point for our interview.

**Truman Boyle:** Is it cold enough for you?

**Prof. Stargazer:** I'll say. A friend asked me yesterday, "Where's global warming when we need it?" Maybe climate change is a seasonal thing.

Somebody ask me how cold it is.

**Tony Quinn:** Okay, how cold is it?

**Prof. Stargazer:** It's so cold that Starbucks is serving coffee on a stick. Pickpockets are putting their hands in people's pockets just to keep them warm. Hitchhikers are holding up pictures of their thumbs. If it gets any colder, they'll have to re-classify **Earth** as one of the outer planets.

**David Tew:** We were wondering if you were going to mention astronomy. What can you tell us about the waxing and waning of the **Moon**?

**Prof. Stargazer:** Every time I try to wax my car, it wanes. (That was a pun, **Ken Walburn**; if you don't get it, ask **Wodger Bwackett** to expwain it to you.)

**Mike Basmajian:** I have a question for you, Professor: When is the best time to look for comets?

**Prof. Stargazer:** At night.

**Mike:** No, what I meant was, Is there a comet season?

**Prof. Stargazer:** Comets can be seen at any time of year. On any given night, there are a few comets in the sky, if you know where to look for them. However, most of them are small and faint. Sort of like **Dwight Harness**, but comets don't talk your ears off.

**Dwight Harness:** I resemble that statement.

**Prof. Stargazer:** You should. At last month's meeting, a visitor asked me if you're being paid by the word.

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**Above:** CTB1, a.k.a. **Abell 85**, a supernova remnant in *Cassiopeia* (photo by **Felix Luciano**). Located immediately east of open cluster **M52**, CTB1 is large – more than  $1/2^{\circ}$  in dia. – and faint. It's 9,800 light-years away, nearly 100 l.y. in dia., and about 10,000 years old.



**Above:** **Jupiter** (photo by **Alan Pryor**). Says Alan, “Imaging Jupiter is tricky, and requires my full-time attention with my type of setup. I wanted 2,000 frames of luminescence and 2,000 frames each for the red, green and blue filters. Getting those 8,000 frames needed to be completed within five minutes for a single LRGB set because Jupiter rotates so fast. I tried to get a bunch of sets in hopes that one set would come out. I couldn’t get a good focus at a focal length greater than 5400mm. The focus improved around midnight.”

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### **About Jupiter’s Rapid Rotation**

It takes 24 hours for the **Earth** to rotate once on its axis.

**Jupiter**, on the other hand, is so large that more than 1,300 Earths would fit inside it. Despite Jupiter’s immense size, however, it takes just 9 hours and 48 minutes for Jupiter to complete one rotation. One Earth-day equals nearly 2.5 Jovian days.

Jupiter’s rapid rotation affects and enhances our view of it. Clouds are literally dragged around the planet, forming dark **belts** of gases that lie deep in Jupiter’s atmosphere and lighter colored **zones** of higher gases. Those belts and zones make Jupiter arguably the most colorful planet in the solar system, with colors ranging from orange, red and yellow to blue, brown, gray and black. The wide range of colors is due to the presence of hydrogen, helium and trace gases such as methane, ammonia and simple hydrocarbons, all of which show different colors at different temperatures.

(Some of the material in the 2<sup>nd</sup> paragraph above is from an unpublished book, *COLORING THE SOLAR SYSTEM: A Children’s Learning-By-Doing Astronomy Book* by **Dr. Richard W. Schmude**.)

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**Above:** **Sunspots** (photo by new member **Truman Boyle**). Sunspots are magnetic storms that arise in the **Sun’s** surface, or *photosphere*. They last for a day or two, and then fade away. They are cooler than the area around them, and thus appear black by comparison. How many sunspots can you count in Truman’s photo?

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