

THE FLINT RIVER 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 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. Fri.-Sat., Sept. 27-28: Club observings (Joe Kurz Wildlife Management Area, at dark); **Thurs., Oct. 10:** Club meeting (7:30 p.m., Rm. 219 Flint Bldg., UGa-Griffin campus); **Fri., Oct. 11:** UGa-Griffin public lunar observing (7-10 p.m.); **Sat., Oct. 19 & Sat., Oct. 26:** public

observings at The Rock Ranch (7-9 p.m.); **Fri.-Sat., Nov. 1-2:** JKWMA observings (at dark).

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President's Message. "To everything," **King Solomon** wrote in *Ecclesiastes* 3:1, "there is a season." Between Aug. 15th-Feb. 15th, it's *hunting* season in Georgia, so the gates at Joe Kurz Wildlife Management Area (JKWMA) will be open for the next 4-1/2 months. We won't have to lock them when we leave.

Those of us who like to observe always look forward to autumn. The cooler weather means no more heat and mosquitos. The days are getting shorter and the nights longer until mid-December, at which time the process begins to reverse itself. The end of Daylight Savings Time on Nov. 3rd makes early evening observing even easier.

Cooler weather. Be sure to go to the [Articles](#) link on our website and read **Smitty's** wonderful article, "Of Mukluks and Messiers." He'll tell you everything you need to know about how to dress from the ground up for cool-weather observing comfort.

The early arrival of darkness. Let's say that you want to spend three hours observing one clear evening. There's a huge difference between starting at 10:30 p.m. (when it's dark in the summer) and finishing at 1:30 a.m., and starting at 6:30 p.m. and finishing at 9:30 p.m., as you'll be able to do between now and late February.

Finally, I think you'll be interested in a message that new member **David Tew**, pastor at Morrow First Baptist Church, wrote in his church newsletter, *The Messenger*:

"I recently visited a meeting of the Flint River Astronomy Club (FRAC), which meets at the UGa campus in Griffin. It was an overwhelmingly positive experience, and I have joined the club and plan to be a regular active member. I was met outside the building, eagerly greeted, introduced to people, and shown exactly where to go. I think everyone spoke to me at some point during the evening. After the meeting, I was specifically invited to the next club event. I was repeatedly told how glad they were that I was there. They went out of their way to make me feel welcome."

Thanks, David, for sharing that with us. And thanks to everyone else who helped to make David and **Mike Basmajian** feel at home with us on their first visit to FRAC.

-Dwight Harness

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Last Month's Meeting/Activities. We had ten attendees at our Sept. 6th-7th JKWMA observings: **yrs. truly** (both nights); **Dwight Harness** and **Aaron Calhoun** (Fri. night); and **Mike Stuart; Larry, Dylan, Ethan & Easley Higgins;** and **Mike Basmajian** (Sat. night). The skies were clear both nights, with short-sleeve temps.

On Sept. 8th, **Dwight Harness, Steven "Smitty" Smith, Aaron Calhoun** and **yr. editor** gave an indoor presentation at The Garden, then went outside to show the sky to about 15 visitors. (Among them were ex-FRAC members **Lee & Sarah Russell**. Lee, who resembles horror writer **Stephen King**, used to be our hospitality chairman. It was good seeing Lee & Sarah again.)

Fourteen members and four guests attended our Sept. meeting. Our visitors were: **Debbie, Robert & Kristen Dutton** and **Melodie Gonzales**. Members included: **Joseph Auriemma; Felix Luciano; Tom Moore; David Tew; Laura & Dwight Harness; Steven "Smitty" Smith; Andy Hasluem; Erik Erikson; Larry Higgins; Mike Basmajian; Jessie Dasher; yr. editor;** and our speaker, **Dr. Richard Schmude**. Richard's talk on **Mars's** polar caps was excellent, as usual, and marred (pun intended) only by Jessie's asking facetiously if it was true that Mars looks as big as the **Full Moon**.

Also at the meeting, the club voted unanimously to donate \$250 to **Stephen Ramsden's** Charlie Bates Solar Astronomy Project to help defray the cost of his expensive solar outreach program at area schools. Smitty handed out attractive "Therapy Is Expensive, the Universe Is Free" FRAC personal cards that he had had made up and purchased with his own funds. It's not the first time that Smitty has done something thoughtful like that for the club.

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This 'n That. We received an e-mail recently from charter member and all-around great guy **John Wallace**, who moved with his wife **Heidi** to Athens, Ga. several years ago but has retained his membership ever since. John, who before moving away earned four A. L. observing pins (Messier, Binocular Messier, Deep Sky Binocular & Double

Star), writes, "I still want to get to the Joe Kurz site. I used to hunt there. Since one gets to the woods before dawn, I'm aware that it's a great dark sky site and the big fields present a good 360° view. Maybe some evening I can combine it with a Griffin visit and get out there. Tell everyone Hi and that I miss you all." We miss you too, John.

*As long-time FRAC members know, **Tom Moore's** daughter **Katie** (who got married last year and traded in her maiden name to become **Mrs. Katie Nagy**) is the astronomy education program manager at the National Air & Space Museum's newly named **Phoebe Waterman Haas Public Observatory** in Washington, D. C.

When the observatory opened in 2009, it was familiarly known as the Public Observatory Project. The name change honors the contributions to astronomy by one of the first women to earn a doctoral degree in astronomy in the U. S., in 1913.

To celebrate the occasion, **the Thomas W. Haas Foundation has donated \$6 million to the National Air & Space Museum**. Businessman Thomas Haas is the grandson of Dr. Phoebe Waterman Haas. The money will be used to refurbish the Haas Public Observatory and fund educational programs. In its first four years of operation, the Observatory has attracted nearly 200,000 visitors from all over the world.

*"The Pisgah Astronomical Research Institute's annual **PARI STAR PARTY** will be held on the PARI campus near Rosman, N. C. from **Fri.-Sun., Oct. 25th-27th**. This year's event celebrates the 50th anniversary of the founding of the Rosman (radio telescope) Tracking Station, now operating as PARI. Star party guests will be able to stay overnight during this very special event and will have access to PARI's optical instruments for observing under North Carolina's darkest skies.

"Located in Pisgah National Forest 30 miles SW of Asheville, N. C., the campus was the site of one of the first U. S. satellite tracking facilities. Today, PARI offers research facilities and educational programs at all levels."

"Registration for the PARI Star Party is now open at <http://www.pari.edu/psp>."

*The Oct. issue of *Sky & Telescope* has a fine article, "The Man Who Illustrated the Heavens," (pp. 72-76) by **Ann Mallory Ashmore**, about

children's author **H. A. Rey**. Besides writing the hugely popular *Curious George* books, Rey also wrote *The Stars: A New Way to See Them* (Houghton Mifflin, 1952), and two years later he penned *Find the Constellations*, a simplified version for children.

In fact, both of Rey's astronomy books were simplifications. He was dissatisfied with the way that existing sky charts depicted the constellations, finding the constellation figures too complex to be useful. (You can see the kind of problems he was referring to in the star atlas illustration shown on p. 47 of the Oct. issue of *Sky & Tel*.) Said Rey, "They don't look like anything and have no relation to their names...I started experimenting, connecting the stars the way children do to make a (connect-the-dots) drawing. I made the constellations clearer. I took exactly the same stars and connected them differently." (p. 72) The results were two astronomy books that are still in print, 61 years later. They have passed the test of time.

*Other items of interest from the Oct. issue of *Sky & Tel*:

Charts on pp. 50-51 show you where to find **Uranus** and **Neptune** between now and Feb. 1st (Neptune) and Mar. 1st (Uranus). As an added treat, the article shows Earth-based photos of both planets that include surface detail.

On pp. 50-51, **Alan Whitman** tells you how to find **Sirius B**, the white dwarf companion that lies close enough to the Dog Star to be invisible within the overwhelming brightness of **Sirius** for most observers.

On p. 19, an update of the Puckett World Supernova Search credits **Tim Puckett's** north Ga.-based team with 280 supernovae discoveries as of June, 2013.

Finally, on p. 56 **Gary Seronik** tells how to collimate your telescope without using any kind of collimating aids such as a Cheshire eyepiece or laser collimator.

*Not to be outdone, the Oct. issue of *Astronomy* (pp. 50-51) features an article by **Richard Talcott**, "Comet ISON Brightens Before Dawn," that tells you when and how to find the comet in October.

The bad news (which you probably already have figured out because ISON is presently diving toward the **Sun**): it will be a morning comet – at least, in October and November. The best time for viewing ISON in Oct. will be between 3 a.m.-5:30

a.m. By morning twilight, ISON will be nearly halfway between the E horizon and overhead.

There's more good news: ISON will be very easy to find – telescopically, anyway. It starts Oct. just 2° from **Mars**, which is both bright (mag. 1.6) and easily identifiable by its reddish-orange color. ISON will lie just 1° from Mars and just 2° N of mag. 1.4 **Regulus (Alpha Leo)** on Oct. 15th, with the trio forming a straight line on that date.

ISON is expected to be near naked-eye visibility by the end of the month.

So here's an extra-special bonus for those of you who want to rise early and get a sneak preview of ISON: *from 4:32 a.m. to 5:37 a.m. on the morning of Oct. 12th, there will be a rare triple shadow transit on Jupiter as the moons Io, Europa & Callisto cast their shadows onto the planet at the same time.* Betcha nobody in FRAC has ever seen that before!

***Trivia Question #1:** *What is the only constellation in the sky that is split into two parts?*

Trivia Question #2: *What is the most expensive object of any kind ever constructed?* (Answers on p. 6.)

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Upcoming Meetings/Activities. We'll start with JKWMA observings on **Fri.-Sat., Sept. 27th-28th**. Come early, dress warmly, stay as long as you want, and have a great time with friends who are looking forward to seeing you again.

For those who haven't been to JKWMA, you'll find directions on our website in the [Downloads](#) article, "Directions to FRAC Sites."

Our club meeting will be at 7:30 p.m. on **Thurs., Oct. 10th**, in Room 219 of the Flint Bldg. on the UGa-Griffin campus. Our program will be the first installment of a multi-part dvd series, *Our Night Sky*. It will teach you how the night sky works, and how to observe with binoculars and telescopes.

On the following evening, **Fri., Oct. 11th**, we'll resume our monthly UGa-Griffin public lunar observing schedule from 7-10 p.m. on the lawn in front of the Flint Bldg. If you're having problems with your telescope, this is a good time to talk about it with folks who are ready and able to help you.

On **Sat., Oct. 19th** and again on **Sat., Oct. 26th**, we'll conduct public observings at The Rock Ranch, a 1,250-acre cattle ranch and "agri-tainment center" for family fun. The observings will last roughly

from 7-9 p.m. We won't be paid for the observings, but admission will be free for one carload of participating FRAC members and their families. Come early and participate in the onsite activities, including: a corn maze; train rides; horse rides; hay rides; a petting zoo; zip lines; pony rides; paddle boats; cane pole fishing; a merry-go-round; a pumpkin cannon; kids gator and jelly jump; and a gift shop and produce stand (open till 6 p.m.) selling products grown onsite.

The Rock Ranch is located in The Rock, Ga., 7 mi. W of Barnesville. To get there from, say, Hampton, Ga., come S on US 19/41 like you're going to JKWMA. Instead of getting off the 4-lane Bypass at Williamson Rd. (Ga. 362), though, set your odometer at 0.0 and continue S for 16.2 mi to Ga. 36 in Barnesville. (There's a yellow "ROCK RANCH" direction sign at the stoplight where you turn.) Turn right onto Ga. 36, go 7 mi. and the entrance to the Rock Ranch is on the left.

When we get closer to the event, we'll send you a site map showing how to get to the setup area.

We'll return to JKWMA for club observings on **Fri.-Sat., Nov. 1st-2nd.**

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The Sky in Autumn: Three to See. The fall skies are overflowing with star clusters, galaxies and nebulas of unsurpassed beauty and wonder. We could easily compile a list of 25-30 objects that fit that description; instead, we have selected three celestial masterpieces that long-time observers revisit often and newcomers will be delighted with.

***NGC 6826, the Blinking Planetary.** Located on the western side of *Cygnus, the Swan*, NGC 6826 is a beautiful and unusual planetary nebula. (See **Alan Pryor's photo on p. 6.**) When looking directly at the planetary at low power, you'll see the central star but only hints of the nebula. But if you look away slightly – a technique known as *averted vision* -- the central star disappears, replaced by the tiny but intensely blue disk of nebulosity.

Where did the star go? Nowhere. It's still there. When you look straight at it, you're using the less sensitive central part of your retina and the star – a point of light -- outshines the nebula. But when you look away slightly, the process reverses itself and the central star is absorbed into the nebula's disk. And if you switch back and forth rhythmically between direct and averted vision, it looks like a

blinking turn signal or caution light. Thus its nickname, the Blinking Planetary.

(Incidentally, when searching for it you'll find it via averted vision, not direct vision. The blue disk will be small but easy to recognize when it enters your field of view.)

***The Coathanger (a.k.a. Collinder 399 or Brocchi's Cluster in *Vulpecula*)** is an unforgettable sight, a large open cluster that forms the unmistakable shape of a coathanger.

Faintly visible to the naked eye as a small, hazy blur to the upper right of the constellation *Sagitta, the Arrow*, Cr 399 is best seen in binoculars or a rich-field telescope. (It's too large to fit into a regular telescopic field of view.) Six stars form a straight-line crossbar and four others form a hook that, taken together, form one of the most familiar asterisms in the night sky.

(Incidentally, there's a Herschel 400 open cluster, **NGC 6802**, at the E end of the Coathanger. Visible in a 6" telescope but not in binoculars, the little cluster shows about six stars at high power.)

***M27 (Dumbbell Nebula in *Vulpecula*).** Most planetary nebulas are too small to show much detail except in photos – but not M27! At low power, it's about as large as your thumbnail and forms a shape that has been likened to a weightlifter's dumbbell – thus its nickname – or an hourglass, a bowtie or an apple core. An O-III or nebula filter brings out more detail in the nebula, but even without a filter you'll be blown away by the view.

What you'll see is the result of a dying red giant star having gently shed its outer envelope of gases in the form of two cone-shaped gas clouds emanating from opposite sides of the star along its polar axis.

(Incidentally, you can see the same process at work nearby with another well-known planetary nebula, **M57, Ring Nebula** in *Lyra*, although our viewing angle of the Ring is rotated 90° to show us the view through the cones.)

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An Observing Report by Alan Pryor

Date: August 24, 2013.

At 7 p.m., the skies were clear at my house. The forecast for the evening was for clear skies, so I polar aligned my 'scope at twilight and came in to

rest up for a long night of observing. I went back outside around 10:30 p.m. Here's my observing report:

“Bows and flows of angel hair
And ice cream castles in the air,
And feather canyons everywhere.
I've looked at clouds that way.
But now they only block the Sun.
They rain and snow on everyone.
So many things I could have done,
But clouds got in my way.”

(Actually, the folksinger **Judy Collins** wrote that in a song called *Both Sides Now*, but I couldn't have said it better myself. She must have a telescope.)

Oh yes, around 3 a.m. I saw the **Moon**.

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Faith in Things Unseen

opinion by **Bill Warren**

The more I think about **John Dobson's** skepticism regarding the Big Bang theory, the more sense he makes. Is it possible that everything in the universe spontaneously arose out of nothing?

Re his statement that cosmologists – astronomers who study the origins, structure and time-space relationships of the universe – have invented “new physics” to justify what they can't prove or even explain: here's another example.

Cosmologists say that their only way they can explain the initial inflation of the universe is that, during the first second after the Big Bang occurred, the laws of physics didn't apply, and at some later point in time the laws kicked in and have been operating ever since.

Well, maybe that's the case. We weren't there, so we don't know. But it sounds like they're expecting us to accept on faith that the universe has operated by two sets of rules – one during that first second when the universe's expansion dramatically exceeded the speed of light, and the other when things slowed down to a point where the laws of physics as we understand them could take over.

Mind you, I'm not arguing here in favor of a pro or anti-Creationist viewpoint; I'm just pointing out that the cosmologists are using scientifically faith-based arguments as an alternative to religious faith-based arguments. They're saying, in essence, *We're scientists, so you should accept on faith what we*

believe but cannot prove. Don't listen to those other guys; our faith in things unseen is better than theirs, because we're scientists and they're not.

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An Interview with Prof. Stargazer

As long-time readers of the *Observer* know, **Prof. Theophilus** (pronounced: the awfulest) **Stargazer** is the world's greatest authority on astronomy, cosmology and ways to sneak a flask of Wild Turkey past airport security. We like to interview the kindly old professor whenever possible; otherwise, the newsletter would be filled with stuff about our members, and you know how boring *that* can be! (If you don't, you haven't talked to **Dwight Harness** lately: a 10-min. conversation with Dwight is a guaranteed cure for insomnia!)

David Tew: We have some questions for you, Professor; do you have the time?

Prof. Stargazer, looking at his watch: Sure, it's a quarter to three. Twenty five bucks, please.

David: Wait a minute, that wasn't my question!

Prof. Stargazer: Coulda fooled me. It sounded like a question to me.

David, grudgingly forking over a twenty and a five: Here's my question, sir: What is *outgassing*?

Prof. Stargazer: With comets, outgassing refers to the release of volatile gases from the comet's icy nucleus as it draws near the **Sun**. With **Larry Higgins**, it refers to something else entirely.

Aaron Calhoun: Is the “blinking” effect of the **Blinking Planetary** a rare phenomenon?

Prof. Stargazer: In the sky, maybe, but not on Earth. When you get older, Aaron, you'll blink on and off too – especially at the wrong time.

One last question, anyone?

Mike Basmajian: Who were the **Pleiades**?

Prof. Stargazer: In Greek mythology, the Pleiades, or “Seven Sisters,” were the daughters of **Atlas**, a Titan. With seven daughters, Atlas would have felt like he was carrying the weight of the world on his shoulders even if he hadn't been.

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Above: NGC 6826, the Blinking Planetary Nebula in *Cygnus* (photo by **Alan Pryor**). This nebula is also known as **Caldwell 15** because it was #15 on **Sir Patrick Caldwell-Moore's** list of 109 beautiful or fascinating objects that **Charles Messier** didn't include on his list.

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Answer to Trivia Questions (p. 3): 1. The constellation *Ophiuchus*, *the Serpent Bearer*, is seen in the summer night sky as grasping *Serpens*, *the Serpent*. *Serpens* is divided into two segments: *Serpens Caput* (the serpent's head) to the west of Ophiuchus and *Serpens Cauda* (the serpent's tail) to the east.

2. "At a cost of \$150 billion, the **International Space Station (ISS)** is the most expensive object ever constructed. At its center are 14 main modules, jointly the size of a 5-bedroom house, where the astronauts live and work. Attached to that cluster is a 356-foot-long truss...supporting an array of 16 solar panels that move to track the position of the **Sun**. Traveling at more than 5 mi. per second, the ISS circles the Earth every 90 min. at an altitude of roughly 220 miles. Anyone equipped with a household telescope can see it on many nights for themselves – a building that flies, a cabin in the sky." (Source: **Richard Layaco**, *Man-Made Wonders of the World [Time Home Entertainment, 2012]*, p. 127.)

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"Many of us find that to leave bright room and cozy chair for the dark world outside is contrary to nature, like a moth flying from the light. As a

bather plunges into cold water, so the sky hunter must immerse himself in the darkness before he will find it comfortable in the night... So rich is this nocturnal wonderland that even for the smallest telescopes numerous objects await observation... A larger lens or mirror is not an assured benefit. Devotion and patience are as important as light grasp."

-Leland S. Copeland, "All Night with the Stars"
Sky & Telescope (Nov. 1949)



Above: NGC 6543, a.k.a. Cat's Eye Nebula or Caldwell 6, a planetary nebula in *Draco* (photo by **Alan Pryor**). The Cat's Eye Nebula was discovered in 1786 by **Sir William Herschel**. It is about 1,000 years old, and is one of the most complex planetary nebulae known. Alan took this photo with his new 11-in. Celestron EdgeHD 'scope, taking 2 hrs., 40 min. of LRGB exposures consisting of 5 min. subframes (whatever that is).

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Then outward turn an optic tube
From some high lonely hill,
That we may glance at cosmic nooks
And marvels rich, until
The morning glow conceals those realms
Where precious things distill,
Far-forth beyond the utmost reach
Of human hope and will.

-Leland S. Copeland, "All Night with the Stars"
Sky & Telescope (Nov., 1949)

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