

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, **Carlres**; Treasurer, **Roger Brackett**.

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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., Mar. 5: Jackson Road Elementary (Griffin, GA) observing (7:00 p.m.); **Thurs., Mar. 12:** lunar observings/club meeting (7-10 p.m., The Garden in Griffin); **Wed., Mar. 18:** JRE rainout date (7:00 p.m.); **Fri.-Sun., Mar. 20-22:** **Georgia Sky View** star party (The Rock Ranch); **Sat., Mar. 28:** Bluebirds & Bluegrass Arts & Crafts Festival booth (Dauset Trail, 9 a.m. -4 p.m.).

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President's Message. We're Baaaaaack!
(**Georgia Sky View**, that is.)

GSV 2015 is a work-in-progress, a scaled-down version of our weekend star party with a new venue featuring darker skies than before and excellent meeting facilities. It will be held at The Rock Ranch, a commercial "agri-tainment center" located 7 mi. W of Barnesville, Ga., from **Fri.-Sun., March 20th-22nd**.

Here's what we can tell you about it at this point:

*Like all star parties, **Ga. Sky View 2015** will be a rain-or-shine event. Tent camping and outdoor cooking is allowed at the Covered Wagons observing site, and Port-O-Lets will be available there. (No more hundred-yard hikes -- or *sprints* -- to the restroom.)

*There are no electric hookups at the Covered Wagons observing site, but you can charge your batteries at Truett's Barn. (See below.)

*The registration fee -- \$38 for adults and \$12 for kids age 13 and under -- includes admission to the park and a Sat. afternoon Star-B-Q meal catered by the Rock Ranch staff. That meal will consist of BBQ, cowboy baked beans, home-made chips, cole slaw, banana pudding (their signature dish) and a beverage.

*We may or may not have door prizes or GSV tee shirts this year due to our late start in getting organized. (That's what I meant by "scaled-down".)

*Since the Rock Ranch folks need to know how much food to prepare, we will not accept walk-ins or onsite payment of the registration fee.

*Attendance will be limited to the first fifty registrants. Make your check payable to FRAC, mark it "GSV" and send it to me as soon as possible at my address, shown on the other side of this page. Registration forms are available on our website, also shown on the other side of the page.

*You won't have to pay to get in, just tell the guard at the main entrance that you're there for the star party. (If there's no guard on duty, you'll have to punch in the code for that day. [See below.]

Once you're inside the facility, signs will guide you to and from the gate and camping/observing area. (Drive slowly, especially on Saturday when visitors are walking around.)

*Since the campsite is about a mile from the agri-tainment area, we can drive from there to Truett's Barn, the indoor meeting facility where our Saturday speaker presentations will be held; and we

can leave the Rock Ranch (via the main entrance) whenever we like. Just don't forget the day's punch-in code.

*To enter the Rock Ranch before 10 a.m. on Sat. morning or after 4 p.m. on Sat. afternoon, you'll need to punch in the code for that day. (It changes every day; we'll let you know in advance what the codes will be.)

*The agri-tainment center will be open for business on Sat. from 10-4, and you are welcome to participate in any of its activities, most of which are free. (To see what they have to offer, Google "The Rock Ranch.") Food sites will offer meals, fast foods, snack items and beverages, or you can just bring what you think you'll need.

*If you've never attended a star party before, go to our website and read "FRAC Observing Guidelines" on our Downloads link. It will tell you everything you need to know.

Finally, let's give a hearty **WELCOME TO FRAC!** to our newest member, **Orren Haynes**.

-Dwight Harness

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Last Month's Meeting/Activities. A splendid turnout of 30 members and visitors attended our Feb. meeting to hear the third installment of **Phil Sacco's** mythology trilogy of talks. Members present included: **Ron Yates; Tom Moore; Dwight Harness; David, Cherrie & Sarah O'Keeffe; Cynthia Armstrong; Aaron Calhoun; Steven "Smitty" Smith; Carlos & Olga Flores; Erik Erikson; Felix Luciano; Joseph Auriemma; Alan Pryor;** new member **Orren Haynes;** Phil and his guest, **Victoria Walters;** and yr. editor. Our visitors were: **Brittany Varga; John & Brittany Reinhardt; Katie & Erin Getz; Alicia Prater; Matt Peck; Ariel Smith; Brian Rice; Meagan Williams;** and **Tyler Strong.** We tried to go outside for Phil's talk, but the wind chased us back inside. But that didn't slow Phil down or cramp his style: he was as animated, funny and informative as ever.

It's no accident that the two largest crowds to attend regular FRAC meetings in the club's 18-year history have occurred when Phil was our speaker. This was one of them; the other was last October.

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This 'n That. Every year around Mar. 21st, thousands of amateur astronomers around the world participate in an informal, all-night observing known as a "Messier Marathon," their goal being to find all of the Messier objects between sundown one evening and sunrise the next morning.

There are only a handful of days during the year when such a goal is realistic. Here's why:

The *vernal equinox* occurs on Mar. 21st, the first day of spring in the northern hemisphere. On that date the **Sun**, moving north in the sky, crosses the celestial equator in *Pisces*, and all 109 Messiers can be seen between sunset and sunrise. If you try a Messier Marathon more than 3-4 days before Mar. 21st, you won't see the Messiers hidden in the eastern twilight the next morning. And if you try a Marathon more than 3-4 days after Mar. 21st, you'll miss the lowest Messiers hidden in the sunset twilight.

The **Moon** can affect Messier Marathons, too: if you try it more than a few days past the New Moon, it will shine brightly, high in the sky, and bleach out many of the Messiers that lie near it.

So here's the good news: (1) *Ga. Sky View 2015 falls directly on the date – Mar. 21st – when you're most likely to see all of the Messiers in one night;* and (2) *the New Moon will be on Sat., Mar. 21st, so the Moon won't disturb our viewing at all!* With clear skies – which is what star parties need anyway – conditions will be perfect for us to conduct a Messier Marathon.

We've prepared a checklist of the Messiers in the recommended order in which they should be found. It's based on working your way across the sky from west to east, since you have to find the westernmost ones before they set. For example, the first two to find are **M74** (a spiral galaxy in *Pisces*) and **M77** (a barred spiral galaxy in *Cetus*), because they are the first to set after sundown. Conversely, the last Messier to rise the next morning will be **M30**, a globular cluster in *Capricornus*.

At any rate, we'll have Messier checklists available at the Mar. meeting and at the Rock Ranch if you'd like to give it a try. The list also is available in the Downloads section of our website, www.flintriverastronomy.org.

You won't have to describe the Messiers or write down anything except your name and checkmarks as you find the Messiers. (**Bill Warren** has a notebook containing photos of all of the Messiers, so you'll know what they look like in a telescope.)

Whoever finds the most Messiers will receive a copy of **H. A. Rey's** splendid book, *The Stars: A New Way to See Them*.

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Upcoming Meetings/Activities. On **Thurs., Mar. 5th**, we'll conduct an observing for the 2nd- and 4th-grade classes at Jackson Road Elementary School in Griffin. The observing will begin at 7 p.m. There will be lots of students and parents, so we'll need lots of telescopes. We hope you can join us on that evening.

The rainout date for the JRE observing will be **Wed., Mar. 18th**.

To get to the school from, say, Hampton, go to I-75 South and get off at Exit 205 (Ga. Hwy. 16). Bear right, and about 1/4 mi. ahead turn right onto Jackson Road. The school is on the right about 7 mi. ahead, at the top of a long hill. Drive around behind the school, and we'll be parked on the large field at the other end of the road. Drive onto the grass before you get to the traffic circle, and follow the path beside the chain link fence. We'll set up our 'scopes just beyond the playground.

The speaker at our club meeting on **Thurs., Mar. 12th** will be **Dr. Richard Schmude**, who will talk about his recent brightness measurements of **Uranus** and **Neptune**. We'll conduct lunar and deep-sky observing from 7-7:30 p.m., after which we'll go inside for the meeting (which will include officer elections for 2015). The observing will resume after the meeting.

Please note: We will NOT hold Joe Kurz club observings on Fri.-Sat., Mar. 20th-21st. Instead, we'll hold our star party, Georgia Sky View, at The Rock Ranch.

To get to the Rock Ranch from Griffin, set your odometer at 0.0 at the junction of 4-lane U. S. 19/41 Bypass and Ga. Hwy. 362/Williamson Road. Go 16.2 mi. south on the 4-lane to Ga. Hwy. 36 in Barnesville. (There's a yellow "ROCK RANCH" direction sign at the stoplight where you turn.) Turn right onto Hwy. 36, go 7 mi. and the main entrance to the Rock Ranch parking area will be on your left. We'll use the paved main entrance, not the one that leads inside the fence to a large grassy parking area.

Once inside the park, follow the signs to the observing site.

The Rock Ranch is located at 5020 Hwy. 36, The Rock, GA 30285. G.P.S. coordinates are: latitude

32.964532, longitude -84.230309. (Or, if you prefer, 32°57'52.11" N, 84°13'49.03" W.)

We've signed up for an observing booth at the annual Bluebirds & Bluegrass Arts & Crafts Festival at Dauset Trail on **Sat., Mar. 28th**. The event will run from 9 a.m. (although we usually arrive around 8:15-8:30 to set up) until 4 p.m. It's a *huge* event – last year they had more than 2,700 attendees – so we get to talk to a lot of people about astronomy, the **Sun** and FRAC. We'd love to have you join us on that date. (We'll have 'scopes to show the Sun, so you don't need to bring anything unless you have a solar filtered 'scope.)

To get to Dauset Trail from, say, Hampton, come south on I-75 to Exit 205 (Ga. Hwy. 16). Turn left (east) toward Jackson on Hwy. 16, and after 3.9 mi. turn right on High Falls Road. Go 5.9 mi. on High Falls Rd., and turn left at Mt. Vernon Church Road. Dauset Trail will be 3.1 mi. ahead on the left. Admissions workers will tell you where we're set up.

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Astronomy Myths, Part Two

by **Bill Warren**

Introduction. One more myth, and three misconceptions.

Unlike myths, which generally are not grounded in fact, misconceptions are beliefs that result from a misunderstanding or misinterpretation of facts.

Regarding the latter, I'll confess: I wasn't aware that they were misconceptions. If you'd like to know more about them, go to the Oct. '14 and Jan. '15 issues of *Astronomy* and see what else **Bob Berman** has to say about them.

Myth #7: *There is evidence of alien activity on Mars.*

Fact: Life as we know it requires water. While ample evidence exists that water once was present on Mars – dried-up riverbeds and channels grooved out of hillsides where water once flowed – no credible evidence has yet been found that life forms exist (or existed) on the Red Planet.

Life cannot exist without water, but water can exist without life. Since Mars once contained water, scientists think that life may have existed there in one form or another. **Michael Crichton** summed up the scientific viewpoint nicely in his book *Jurassic Park*: "Life will find a way."

But that's not what makes this a myth.

The idea of life on Mars arose in 1877, when the Italian astronomer **Giovanni Schiaparelli** reported the existence of "canali" (Italian for *channels*) on Mars. An English translation of Schiaparelli's article incorrectly translated the word as "canals." After reading the article, American astronomer **Percival Lowell** studied Mars, noted a network of such markings, drew maps of them and announced that they were irrigation canals dug by an advanced martian civilization. It was a shockingly unscientific leap of logic by an otherwise brilliant and highly respected astronomer.

Readers of **Edgar Rice Burroughs's** Mars-based science-fiction books eagerly accepted Lowell's bold assertion as fact. But other astronomers failed to see Lowell's "canals" – or else if they saw them, the patterns were nothing like the ones Tombaugh had drawn.

In 1974, Mariner 10 sent back close-up photos of the martian surface, and two years later the Viking 1 & 2 landers arrived on Mars. None of them – nor any other Mars orbiter or lander since then – has showed the presence of canals.

So what did Schiaparelli, Lowell, and other astronomers see? Best guess is, they probably saw transient martian surface features such as sandstorms and shifting dunes that change in shape like the martian polar caps.

In 1976, a Viking orbiter photo of Mars's Cydonia region showed a surface feature that looked very much like a human face that had been carved out of a small hill. UFOlogists insisted that the likeness was too compelling to be a natural geological feature. But in 2001, a Mars Global Surveyor photo with a resolution of 6 ft. per pixel revealed that the so-called "Martian face" at Cydonia was in fact nothing more than a chance arrangement of terrain and interplay of light and shadows.

Even today, photos taken by the Mars Curiosity Rover have kept the UFOlogists' dream alive of finding life on Mars.

On Apr. 3, 2014, a photo taken by the rover's right-eye camera showed a bright gleam of light near the crest of a distant crater rim on the horizon. (A photo taken seconds later by the left-eye camera showed no such light beam.) Mission engineers speculated that the light was due to either sunlight reflected off a rock, sunlight leaking through a vent in the camera's housing -- it's happened before – or

else it was cosmic rays striking the camera's detector.

Two months later, an "armchair astronaut" claimed to have discovered a "secret space base" while using Google Mars. (The series of four dots of light on the photo was later determined to have been a cosmic ray streak on the image.)

Since then, other "discoveries" by UFOlogists have included: martian rocks that apparently have moved from one photo to another; mysterious flying objects in the martian sky; a human or alien skull; a thighbone; an iguana; a cat; two dinosaurs; jelly doughnuts; an image of **President Obama**; and a stone-carved alien coffin.

Misconception #1: *Black holes suck in everything around them.*

Fact: Black holes aren't cosmic vacuum cleaners. A black hole simply swallows up whatever passes beyond its *event horizon* (outer boundary). That event horizon is tiny compared to the black hole itself, so its ability to pull objects into it is extremely limited. According to **Bob Berman** ("Why Everything You Know About Black Holes Might Be Wrong," *Astronomy*, Oct. 2014), in order to get sucked into a black hole you'd practically have to be aiming for it. "If the Sun collapsed to become a black hole right now, Earth would keep orbiting just as before. Our planet wouldn't budge in its direction, not an inch." (p. 26)

Why? Because as a black hole the Sun's event horizon would not extend to 93 million miles from the Sun. It would extend less than 100 miles from the Sun's surface.

It wouldn't matter to us, though: the Earth would be fried to a cinder long before the Sun finished becoming a black hole.

Misconception #2: *Nothing – not even light – can escape from a black hole's event horizon.*

Fact: Again according to Berman (*Astronomy*, Jan. 2015), that's true only regarding "objects traveling naturally, like photons (light particles) or infalling bits of star stuff. It does not apply to an object like a rocket that can accelerate. A rocket could indeed escape (from an event horizon), given enough power and fuel – and no, it needn't reach light speed to do so." (p. 11)

Once an object passes beyond the event horizon, however, its fate is sealed. Drawn toward the black hole's core, or *singularity*, it is first stretched – Berman refers to it as being "spaghettified" -- and

then compressed until it becomes a permanent part of the singularity.

Misconception #3: *In order to escape Earth's gravity, a rocket must attain a speed of about seven miles per second, or 25,200 mph.*

Fact (again, from Berman): "This velocity requirement is true for an object heading upward without additional help, like a cannonball fired from the ground... But with continuous rocket acceleration applied, an astronaut could fully leave our planet at a speed of one mile per second, or even one mph!" (p.11)

It would just take a lot longer to leave Earth behind. Do we really want our astronauts to take 240,000 hours – 27 years – to reach the **Moon**?

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Above: Comet Lovejoy (C2014 Q2). Photo by **Ron Yates**. The comet will be in *Cassiopeia* in March, on its way out of the inner solar system. Can you see the faint tail in Ron's photo?



Above: M45 (the Pleiades, or Seven Sisters), an open cluster in *Taurus*. **Felix Luciano's** photo shows the "little dipper" shape of the Pleiades, with their father **Atlas** forming the "handle" and, to his

right starting at the center of the photo and progressing clockwise, the four most nebulous Sisters **Alcyone, Merope, Electra** and **Maia**.



Above: NGC 2024 (Flame Nebula), an emission nebula in *Orion*. Photo by **Alan Pryor**. Located immediately E of **Alnitak (Zeta Orionis)**, the easternmost star in Orion's belt, **Flame Nebula** is easy to find. For best viewing results, move Alnitak just out of your field of view.

When **yr. editor** observed **NGC 2024** during his Herschel 400 quest, he noted that it was "easy to see on a dark, clear night. The dust lanes were more apparent without a filter than with one." That's not always true, though. For best results, use an O-III or nebula filter.



Above: NGC 891, an edge-on spiral galaxy in *Andromeda*. Lovely in **Felix Luciano's** photo, **NGC 891** can be a challenge for visual observers. You won't see the dust lane, just an elongated, cigar-shaped glow. 891 is a target in the A. L.'s Herschel 400 and Caldwell (#23) observing programs.

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Above: NGC 2359 (Thor's Helmet, a.k.a. Duck Nebula, Gum 4 and Sharpless 2-298), an emission nebula in *Canis Major*. North is toward the lower left corner of **Alan Pryor's** photo.

In **yr. editor's** Herschel II observing notes, **NGC 2359** was "a beautiful nebula overlaid with about ten stars and shaped like a compressed state of Florida: the panhandle was clearly visible via direct vision, a mag. 9 star was Jacksonville, other stars were the urban sprawl of central and south Florida, and a large dark area to the SW was the Gulf of Mexico.



Above: NGC 559, an open cluster in *Cassiopeia*. Photo by **Felix Luciano**. From **yr. editor's** Herschel 400 observing notes: "NGC 559 is a beautiful mixture of 30 or more bright and faint stars at the end of a 6-star chain of mostly 9th-mag. stars. The cluster is small – about a pinky-width in size at 220x – and vaguely star-shaped." It is also a target in the Caldwell (#8) program.

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Below: M20 (Trifid Nebula), an emission and reflection nebula in *Sagittarius*. Photo by **Ron Yates**. **Trifid Nebula** is one of the very finest showcases in the summer sky. It measures about 1/3° in dia., with dark lanes giving it the appearance of a piece of popcorn. M20 is a target in the Messier, Binocular Messier and Herschel 400 observing programs.



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Above: NGC 1491. Photo by Felix Luciano. This thumbnail-sized, fan-shaped emission nebula in *Perseus* is one of the most delightful targets in the ultra-difficult Herschel II observing program. Like most nebulae, it shows up best in an O-III or narrowband filter.

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