

THE FLINT RIVER OBSERVER

NEWSLETTER OF THE FLINT
RIVER ASTRONOMY CLUB

An Affiliate of the
Astronomical League

Vol. 17, No. 11 **January, 2014**

Officers: President, **Dwight Harness** (1770 Hollonville Rd., Brooks, Ga. 30205, 770-227-9321, rdharness@yahoo.com); Vice President, **Bill Warren** (1212 Everee Inn Rd., Griffin, Ga. 30224, warren7804@bellsouth.net); Secretary, **Carlos Flores**; Treasurer, **Roger Brackett** (686 Bartley Rd., LaGrange, GA 30241, 706-580-6476, db487@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.

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. 3-4: JKWMA observings (at dark); **Thurs., Jan. 9:** FRAC meeting (7:30 p.m., The Garden in Griffin); **Fri.-Sat., Jan. 31-Feb. 1:** JKWMA observings (at dark).

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President's Message. Change isn't always easy.

For example, we knew that we were going to lose our observing site, Cox Field, because the Coxses were in their 90s. So in Sept. 2012 we moved to Joe Kurz Wildlife Management Area (JKWMA). It wasn't an easy decision to make – and despite the fact that JKWMA is a darker site than Cox Field ever was, it hasn't been a wildly popular move because JKWMA is farther away from where many of our members live than Cox Field was. But it was a necessary decision: the alternative was to wait for the Coxses to spring the news on us suddenly that we couldn't use their land for observing any more, and we'd be scrambling to find somewhere – *anywhere* – to observe.

Now we think it's time for other changes – or at least it's time for us to experiment. *So for the next six months or more we'll hold our club meetings at The Garden, UGa's agricultural headquarters in Griffin.* If that site works out to our mutual satisfaction, we'll talk with the man in charge of The Garden, **Dr. Wayne Gardner**, about making the change permanent.

We'll have another change to announce in Feb. or March. For now, though, just remember that **we won't hold our January club meeting in the Flynt Bldg. on UGa-Griffin's main campus. Instead, we'll meet in The Garden's main building.**

Speaking of Dr. Gardner, I'm sure you'll want to join me in welcoming him to FRAC as an honorary member. He's a really nice guy, easy to talk to and you're gonna like him a *lot*.

-Dwight Harness

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Last Month's Meeting/Activities. We had four members at JKWMA on Nov. 29th: **Joe Auriemma; Mike Basmajian; Erik Erikson; and yrs. truly.** The sky was clear, and while we didn't see any UFOs, we saw a lot of other stuff.

Dwight Harness and yr. editor went out the following evening under partly cloudy skies that lasted about an hour before closing in, and Dwight got in some Messier hunting.

A fine crowd of 31 FRACsters attended our Christmas party: **Mike Basmajian; Steve Bentley; Mike Stuart; Felix Luciano; Andy Hasluem; Linda & Larry Higgins; Betty, Laura**

& Dwight Harness; Renny & Jessie Dasher; Dr. Richard Schmude; Martha & Joe Auriemma; Deborah and Steven “Smitty” Smith; Jessica & Aaron Calhoun; Olga & Carlos Flores; Woody & Ben Jones; Jane Barreski & Roger Brackett; Cherrie, Sarah & David O’Keeffe; Mason & Erik Erikson; and yr. editor. We had enough door prizes – 36 – to ensure that every household represented received two prizes.

After the last doorprize was awarded, Dwight announced that he had one more award to give out. Yr. editor should have known what was coming next: a practical joke.

Several years ago, **Steve Bentley’s** daughter found a bent and broken little telescope on the side of the road. It had been run over by a car, and was in sad shape. She gave it to Steve, who knew just what to do with it. At our star party, Steve announced that, in recognition of **Larry Higgins’s** many years of faithful service to FRAC, we had a very special gift for him that perfectly expressed our feelings for him. Steve left the stage briefly, and returned carrying the telescope – and “tripped” and dropped it onto the floor, where it broke into about a thousand pieces.

So yr. editor should have known that something was up when people were sneaking glances at him while Dwight was talking about “what a brilliant innovator of telescope equipment Bill Warren is.”

The award was “Scope Nutz, a precision telescope counterweight system. Add nuts, bolts, washers, golf balls, small rocks, sand, broken teeth, kidney stones, toenail clippings, and/or dirt until telescope is perfectly balanced.”

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This ‘n That. Here’s an early reminder that your 2014 FRAC dues are up for renewal in February. It’s still \$15 a year, and even in today’s economy that’s a good deal. Consider:

For just \$1.25 a month, you get 12 meetings a year, 22 club observings, 12 issues of the *Observer*, 4 issues of the *Reflector* – and if you attend our Christmas party you’ll win at least one doorprize and probably more than that.

If you pay by check, make it payable to FRAC. You can give your check to **Dwight, Bill** or **Roger** at the Jan. or Feb. meetings or observings, or mail it to: Roger Brackett, 686 Bartley Road, LaGrange, GA 30241.

*As you probably know by now, **Comet ISON (C/2012 S1)** didn’t survive its ring-around-the-rosie close encounter with the **Sun** on Nov. 28th.

“We saw the comet going in,” said astrophysicist **Karl Battans**, “and we saw the object formerly known as ISON emerging from the other side of the Sun.” By then, it was nothing more than a cloudy glow, vanishing like breath on a cold morning.

“The comet essentially eroded to nothing, NASA Jet Propulsion Laboratory researcher **Zdenek Sekanina** explained. During ISON’s inward rush toward the Sun, it experienced several cycles of brightening and dimming. Each phase represented ices sublimating into gases as they became exposed to the Sun’s radiation.

The first to do so was CO and/or CO₂, followed by other ices until, as ISON crossed the orbit of **Mars**, water ice turned into water vapor.

By November 21st, Sekanina said, ISON’s nucleus was exposed and “began to fragment into multiple pieces.” By Nov. 28th, even before ISON reached perihelion (the moment of its closest approach to the Sun), it was no longer a comet.

(The previous information is courtesy of **Liz Fuller-Wright**, writing for the *Christian Science Monitor* on Dec. 11th.)

On Dec. 18th, scientists using the Hubble Space Telescope could find no trace of fragments as faint as mag. 25 where ISON was supposed to be.

Thus, another potential candidate for “Comet of the Century” has bitten the dust and fallen short of our hopes and expectations. The moral of the story, as **Icarus** of Greek mythology learned when he flew too close to the Sun, is simple: *Don’t mess with the Sun.*

Bye-bye, ISON. You were fun while you lasted.

***The Herschel-Messier Connection.** In 1781, a German-English amateur astronomer named **William Herschel** discovered an unusual object. He wasn’t sure what it was, and no one else was, either. Since **Charles Messier** was well-known for his list of strange objects that looked like comets but weren’t, he was asked to help figure out what Herschel had discovered.

Working with a French scientist named **Bochart de Saron**, Messier determined that the object definitely was not a comet. Their calculations of the object’s orbital path helped to confirm that it was in fact a planet, the 7th to be discovered and the first in modern history. (The other six, including

Earth, were visible to the unaided eye.) The new planet was eventually named **Uranus**.

*The Dec. issue of *Astronomy* (pp. 44-47) contained an article, "SPACECRAFT: Where Are They Now?," by **Roen Kelly**. Among its tidbits of information regarding U. S. satellites:

-**Vanguard 1**, launched in 1958 about six months before NASA was established, is the oldest man-made satellite still in orbit. Its transmitter stopped working in 1964, but the satellite will continue to orbit the Earth until around 2200 A.D.

-**Mariner 2**. The first spacecraft to fly by another planet (**Venus**, in 1962), Mariner 2 is still orbiting the **Sun** although no one knows exactly where it is.

-**Viking 1**. The first spacecraft to successfully land on **Mars** (in 1976), Viking 1 was imaged by the Mars Reconnaissance Orbiter in 2006, so it's still there. The orbiter that carried it to Mars is still orbiting the planet.

-**Voyager 1 & Voyager 2**. After photographic flybys of **Jupiter** in 1979 and **Saturn** in 1980 during its flybys, Voyager 1 left the solar system in July, 2013. It is presently 125.8 A. U. – that's *11.7 trillion miles* – from Earth. Unlike, say, **Ken Walburn**, its instruments are still working.

Voyager 2, which flew by Jupiter, Saturn, **Uranus & Neptune**, is now 102.6 A. U. (9.5 trillion miles) away.

-The **New Horizons** satellite is still on its way to **Pluto**, and will arrive there on July 14, 2015.

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If astronomers ever detect the presence of gold or diamonds on **Pluto**, will they refer to it as a "miner planet"?

-**Prof. Stargazer**

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Upcoming Meetings/Activities. Our first JKWMA observings of 2014 will be on **Fri.-Sat., Jan. 3rd-4th**.

As **Dwight** mentioned earlier, our January meeting will be held at 7:30 p.m. on **Thurs., Jan. 9th** at UGa-Griffin's **The Garden** facility.

Although best known for its namesake, a small but exquisite garden of flowers and shrubbery, The Garden also houses a building suitable for meetings,

with all the amenities we've enjoyed in the Stuckey & Flynt Bldgs. since 2006.

Our speaker, **Felix Luciano**, will show a 24-min. video, after which he'll speak briefly.

Directions to The Garden. Coming south from, say, Hampton on 4-lane U. S. 19/41, drive through the intersection where you'd turn left to go to a club meeting or right to go to Fayetteville on Ga. 92, and stay on 19/41 past Ryan's on the right. After crossing over the RR tracks, take the Griffin exit. At the stoplight at the end of the S-shaped connector, turn right onto Ellis Road. About 100 yds. down the road you'll cross over a bridge. Another 50 yds. past the bridge you'll see a big stone wall on the right with "The University of Georgia – College of Agricultural & Environmental Sciences" on one side and "Research & Education Garden" on the other side, with a black gate between them. Turn right onto the asphalt road, pass through the gates, and follow the main road uphill and to the left until you come to the garden on the right and a building on the left. That building is where we'll hold our meeting.

Coming from, say, Barnesville S of Griffin on U. S. 19/41, get off the 4-lane at Ga. 16 and turn right. Go to the 2nd stoplight and turn left onto North Expressway. (Wendy's is on the left.)

Go to the 2nd stoplight and turn left at Ellis Road. The entrance to The Garden is on the right about 150 yards from the stoplight. Turn right onto the asphalt road, pass through the gates and follow the main road uphill and to the left until you reach the garden on the right and our meeting building on the left.

Due to the cold weather that prevails in Jan. and Feb., we won't resume our lunar observings until March.

We'll wind up January with JKWMA observings on **Fri.-Sat., Jan. 31st-Feb. 1st**.

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People You Should Know: Dr. Richard Schmude. Okay, kiddies, here's today's homework assignment: Go to FRAC's website at www.flintriverastronomy.org and click on the Awards link on the left. At the bottom of the page you'll see "**Richard Schmude**" and a link to a Spring, 2008 Special Edition of the *Observer*. Click on that link: it's about Dr. Schmude and his activities and accomplishments that led to his receiving the A. L.'s prestigious **Astronomical**

League Award in 2008. Even if you've read it before, it wouldn't hurt to be reminded of what an extraordinary astronomer, teacher and person Richard is. There's simply not enough room in this 6-pp. newsletter to list Dr. Schmude's many accomplishments in astronomy. (That Special Edition alone is 6 pp. in length.)

The Astronomical League Award is the highest honor that a member of the A. L. can receive. Nominees must be elected unanimously by a panel of judges consisting of the A. L.'s president, vice president and president-elect. Not only was Richard elected unanimously as the only recipient of that award in 2008, but his election was announced just seven days after his nomination letter was sent in. They knew, just as we do in FRAC, that Richard epitomizes what an astronomer and teacher should be.

Rather than recapping his accomplishments here, we'll focus on Richard as a teacher and a person.

For the past 19 years, Dr. Schmude has taught a full load of classes at Gordon College. Many of his past students have told us that, if you want to enroll in his classes in chemistry, physics, physical science or astronomy, you'd better arrive early to register because his classes are always the first ones filled.

Although highly knowledgeable, Richard has the rare ability to simplify complex topics and render them understandable for whatever audience he's speaking to, whether it be elementary, middle, high school or college students, FRAC meetings or national conventions. Richard never talks down to his audience, nor does he consider it necessary to show his listeners how much he knows.

Whether addressing a group or talking informally in a social setting like our Christmas party, Richard's focus is on whom he's talking to, not himself. As with all great teachers, Dr. Schmude is a great listener: he always treats others' comments or questions, no matter how far-fetched, with respect. Newcomers to FRAC are always amazed at how easy a man of such lofty accomplishment is to talk to. But that's Richard, and it's one of the many reasons why he's so popular, not just in FRAC but nationally and internationally as well.

So go back and read (or re-read) that 2008 Special Edition of the *Observer*. After reading it you may wonder, as we do, about the following:

The universe and astronomy are literally jam-packed with complex, unexplained mysteries like the composition of dark matter and dark energy.

Perhaps the greatest mystery of all, however, is a more down-to-earth question: *How on earth has tiny Gordon College in Barnesville, GA managed to keep Dr. Schmude for nineteen years?*

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LASER COWBOYS

article by Steven "Saratoga Smitty" Smith

(Editor's Note: It's always a treat when Smitty decides to share his thoughts regarding astronomy with us. He is like the old stock brokerage firm E. F. Hutton: When Smitty talks, people listen -- and they learn.)

In an article, "The Laser Threat," that appeared in the Jan., 2014 issue of *Air & Space/Smithsonian Magazine*, author **Christine Negroni** reports that the number of hits on aircraft by laser pointers is increasing rapidly.

In 2006, the Federal Aviation Administration (FAA) received 384 reports of laser strikes.

Between Jan. 1-Aug. 1, 2013, however, there were 2,282 hits reported, and the FAA projects those figures to a total of 4,250+ hits for the entire year.

There are two federal laws governing the use of laser pointers. First, shining a laser at an aircraft is punishable with a sentence of up to five years in prison and a fine of \$11,000. And second, interfering with a flight crew carries a sentence of up to 20 years and a \$250,000 fine. I think you'll agree that even a reduced sentence for conviction of either offense would hurt.

Laser pointers are often sold as novelty items in souvenir shops and convenience stores. A high number of laser strikes occur during the summer at beach and resort communities. Many infractions are committed by uninformed or careless people who play with laser pointers as if they are a life-sized video game.

However, there are also a few individuals who intentionally target aircraft. For example, in 2012 a Florida man who thought officials at a nearby airport were ignoring his complaints about airport noise aimed his laser pointer at departing aircraft. He received a sentence of 6 months in prison.

Laser pointers are used primarily by lecturers, amateur astronomers and carpenters. Federal regulations limit legal pointers to 5 milliwatts.

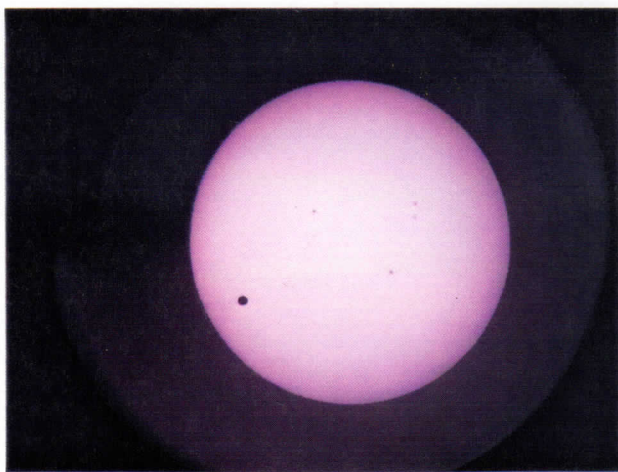
Physical damages from being struck by a 5mw beam include: eye hazard, up to 52 ft.; flash blindness, 53-260 ft.; glare/disruption, 261-1,200 ft.; distraction hazard, 1,201-11,700 ft.; and no distraction beyond 11,700 ft. Estimating distance is especially difficult at night due to the absence of ordinary visual cues, so I would strongly caution everyone against thinking, "That plane is too far away for my beam to reach it."

Years ago, before laser pointers were cheap and easily available for us astronomers, the intrepid **Phil Sacco** made his own tool for pointing out objects in the night sky. He used a long fishing rod with wires running out to a small, dim bulb at the rod tip. It worked, too, but you had to be standing near Phil to see where he was pointing.

Today, Phil uses a laser pointer like the rest of us. I love my own laser pointer: it effectively shows the location of celestial objects to large numbers of people without requiring them to huddle around me. (*Editor's Note: We gave out five laser pointers as door prizes at our 2012 Christmas party, and four in 2013.*)

I know I'm "preaching to the choir" in telling FRAC members to be safe with their lasers, but we must educate the public about their safe usage, too. Some folks, especially children, are fascinated by the "Star Wars"-like nature of green laser beams. We need to caution them whenever possible about the hazards and penalties for their misuse.

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Above: Venus transiting the Sun (photo by **David O'Keeffe**). David wasn't a member of FRAC on June 6th, 2012 when Venus transited the Sun for the last time before Dec., 2117. He photographed the event, however, and sent us his photo after rejoining

the club last November. A handful of sunspots can be seen, but they literally pale in comparison to lovely Venus drifting slowly across the Sun's disk.



Above: M38 & IC 1907, two open clusters in *Auriga* (photo by **Felix Luciano**). **M38** was not discovered by **Charles Messier**, although it appeared in the 1st edition of his list published in 1771. It was discovered by **Guillaume Le Gentil**, a French astronomer, in 1749.

M38 is a large – about $1/3^\circ$ – scattered cluster with about 70 stars visible in small 'scopes and more than 100 visible in a 10-in. 'scope. Like the other open clusters on Messier's earliest list, M38 features an abundance of bright stars.

M38 appears in the Binocular Messier, Messier, Open Cluster and Urban observing programs.

NGC 1907, on the other hand, is a small, compact cluster of about 30 stars visible in a 10-in. telescope in an area about the size of your thumb. It lies about $3/4^\circ$ south of M38, near the top center of Felix's photo.

1907 appears in both the Deep Sky Binocular and Herschel 400 observing programs.



Previous Page, Lower Right Corner: Heart of the Heart (IC 1805, a.k.a. Heart Nebula in Cassiopeia. Heart Nebula is large: it measures $1^\circ \times 1^\circ$, and most of it can be seen in **Felix Luciano's** stunning photo.

The dense, **Orion Nebula**-shaped "V" at the right is the notch that forms the "valentine" outline of IC 1805. The gaseous lobe to the upper left is much larger than the one at the lower right.

At the heart of the Heart lies **Melotte 15**, a large open cluster of two dozen or more stars with about 1/3 of them brighter than the rest. North is toward the lower left of Felix's photo.



Above: NGC 2392, Eskimo or Clown Face Nebula, a lovely planetary nebula in *Gemini* (photo by **Alan Pryor**). The popularity of **NGC 2392** may be seen in its presence on the observing lists of no less than four A. L. observing programs: Caldwell (#39 on the list), Herschel 400, Planetary Nebula and Urban.

2392's more familiar nickname, Eskimo Nebula, derives from its visual resemblance to the face of an Eskimo wearing a parka. The "face" is the bright center surrounded by a dimmer perimeter – the "hood" of the parka. A mag. 8.5 star lies to the upper left of the Eskimo in Alan's photo.

Seen as a Clown Face, the bright central area is the clown's large rubber nose.

The next time Eskimo Nebula comes up in a conversation, you can point out that it was discovered in 1787 by **Sir William Herschel** (see p. 2) and, like **Ring Nebula (M57)** and **Dumbbell Nebula (M27)**, it is a bipolar double shell nebula.

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LATE BREAKING NEWS: On Dec. 28th, **FRAC** received an incredible belated Christmas present when a gentleman – not a club member -- who wishes to remain anonymous donated a telescope to the club. It's not just any old telescope, though. It is, rather, a 4-inch, f/8 Takahashi FS102 refractor on a Losmandy equatorial mount (see below). The telescope is about ten years old, but appears to be in excellent condition. The gift included all manuals, several eyepieces and filters and a battery pack.

Takahashi is one of the most highly respected telescope manufacturers in the world.

*Their telescopes are top-of-the-line in every respect, and we are extremely fortunate to have been singled out **FRAC** to receive such a wonderful gift.*



Above: Dwight with **FRAC's** new telescope. Simply lovely. (The telescope, that is, not Dwight.)

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