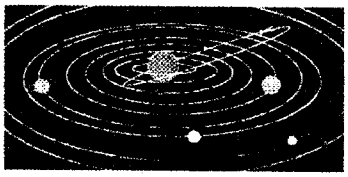
THE FLINT RIVER OBSERVER



Vol. 4, No. 5 **FLINT RIVER ASTRONOMY CLUB** **July, 2000**

Officers: President, **Steven (Smitty) Smith** (583-2200) -- or, if you prefer e-mail: <starship-saratoga@dellnet.com>; Vice President/newsletter editor, **Bill Warren** (229-6108; <warren1212@mindspring.com>); Secretary-Treasurer, **Ken Walburn** (P. O. Box 1179, McDonough, GA 30253 / 954-9442); AlCor, **Neal Wellons**, and Web Site Coordinator, **Cody Wellons** (946-5039); Librarians, **Tom** and **Katie Moore** (228-6447); Observing Chairman & Public Observings Coordinator: **Larry Higgins** (884-3982 <larrylhiggins@yahoo.com> . All of these phone numbers have 770 area code prefixes. Club mailing address: 1212 Everee Inn Road, Griffin, GA 30224. FRAC web page address: <http://welcome.to/frac>.

Please notify **Bill Warren** promptly if you have a change of address or e-mail.

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Club Calendar. Fri.-Sat., June 30-July 1: Cox Field observings, at dark; **Thurs., July 13:** FRAC meeting (Beaverbrook media center, 7:30); **Sat., July 22:** special "Comet LINEAR observing, Cox Field at dark; **Tues., July 25:** Morrow Branch Library observing, 8:00; **Fri.-Sat., July 28-29:** Cox Field observings, at dark.

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Vice President's Message. As if four club observing nights in July weren't enough -- and they *aren't*, considering how miserable observing conditions have been so far this summer -- observing chairman **Larry Higgins** has scheduled a special -- and separate -- **COMET LINEAR** observing at Cox Field on **Sat., July 22nd**. Whether this will be a club or public observing is unknown at writing.

What *is* known is that, while LINEAR is the first broadly observable comet since Hale-Bopp back in 1997, its presence in the evening sky will be short-lived and confined largely to the last half of July; before then it will be best seen during the early morning hours, and after then it will be dipping below the W horizon in southern *Virgo*. It will be at its brightest on the evening of July 27th.

If you haven't observed a comet before, this will be a grand opportunity for you to do so, especially if LINEAR maxxes out at a hoped-for mag. 3.5. It will also be a rare opportunity to log a comet in the AL's Universe Sampler club, and to do so among experienced comet watchers who can tell you where to find it and what you're seeing.

So come on out on the 22nd and join us at Cox Field as we play "Pin the Tail on the Comet.". Bring along your binoculars or telescope -- for once the rule of the night will be, *the smaller the 'scope, the better your view of the comet will be,* since all you're likely to see in big 'scopes at high power is the coma and nucleus.

-Bill Warren

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Last Month's Meeting/Activities. Hazy, dewy conditions failed to dampen the spirits of the seven observers who showed up for our Fri., June 2nd, Cox Field observing: **Jerry Williams, Katie Moore, Dawn & Steve Knight, John Wallace, Joe Auriemma, Smitty & yrs. truly. Tom Moore** showed up, briefly, too, but the Moon didn't so Tom went home.

Six nights later, the chief culprit was light pollution at our public observing at Hampton Library, but you'd never have known it from the enjoyment shared by FRACsters **Mike Stuart, Katie Moore, Dawn & Steve Knight, Dan Pillatzki, Jerry Williams, Neal Wellons & yr. reporter.** Highlights included the unveiling of Jerry's brand new 10" equatorial Meade Starfinder (collimation courtesy of Steve K.), and Dawn's finding **M4** amid clouds, haze and light pollution, using only a 238x eyepiece in yr. editor's 12-1/2" scope -- a feat he had trouble duplicating with his 58x eyepiece under the existing conditions. (There were only 12-15 stars visible in M4 at 238x.)

Katie Moore was the featured speaker at our June meeting; she took us through the process of making an astrocamera out of a used disposable camera. It was an excellent program -- and a valuable experience for Katie as well: she has been asked to speak at the August meeting of the Atlanta Astronomy Club.

Also at our FRAC meeting, **Jerry Williams, Steve Knight & David Ward** received Zombie certificates, **Steve** received a "Katie's Club" certificate, and **Dan Pillatzki** received his Messier certificate and pin. **Dawn Knight** won the doorprize, a little book of galactic and deep-sky photos supplied by **Neal Wellons.**

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Club News. Please note on p. 1 the change in **Larry Higgins's** phone no.; he's now living near Concord in an area that has a couple of very nice dark sites. His address, incidentally, is 170 Oxford Circle, Concord, GA 30206.

*At the June FRAC meeting, **Neal Wellons** reported on his recent trip to Socorro, NM, to the National Radio Astronomy Observatory (NRAO), home of the Very Large Array of radio telescopes. (That will come as a big surprise to **Ken Walburn,** who thought the Very Large Array was a Las Vegas chorus line.)

Neal took his short tube 'scope and camera along with him on his trip, and "took night shots after (the) VLA center closed," as he wrote in a post card from the site. Presumably, the "shots" he took were astrophotos and not gunshots -- although he mentioned that the jackrabbits in the area were plentiful and *huge.*

*Unless you've been hiding under a rock for the past couple of months, you already know that **Katie Moore** won the "**Horkheimer 2000 Award for Exceptional Service By a Young Astronomer";** but did you know that her observing socks have "Twinkle, twinkle, little star" written on them?

Except in the sense of being alive and well, **Katie** is like **Elvis**: you don't need a last name to know who she is.

It's nice to have an observing club ("Katie's Club") named after her -- but it would also be nice to see a Lunar Club certificate with her name on it. Maybe we've been kidding the wrong **Moore** about that all this time...

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Membership Renewals Due in July: Steve & Dawn Knight; and **Dan, Kathy, Amanda & Megan Pillatzki.** Send your $10 check to Ken Walburn at the address listed on p. 1.

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Upcoming Meetings and Activities. The more perceptive among you will have noted in the Club Calendar that we have *two* Cox Field observings in July, on **Fri.-Sat., June 30th-July 1st,** and **Fri.-Sat., July 28th-29th.** With new moons falling on July 1st and July 29th, those observing dates double your chances of attending at least one observing session in July -- or else they double the number of excuses you'll need to come up with for not dragging your carcass out to join us at Cox Field at least once in July.

The speaker at our club meeting on **Thurs., July 13th** (7:30), will be **Richard Jakiel,** AAC's observing chairman and a frequent contributor of deep-sky articles and drawings for *Sky & Telescope.* (His latest article, "Exploring the IC 342 Group," appeared in the March, '00 issue of *Sky & Tel.)* Rich's topic

will be "What the Amateur Astronomer Can Expect to See in Hubble Galaxies." To prepare for his talk, you can refer to Brian Skiff's article, "Exploring the Hubble Sequence By Eye," in the May issue of *S&T.*

Don't forget, there's a special Cox Field "Comet LINEAR" observing scheduled for **Sat., July 22nd**.

(Personal Aside to Katie Moore: We'll all be thinking of you on July 19th-22nd when you're attending the **Astrocon 2000** convention in Ventura Beach, California, to receive your award. Don't forget to take along a pair of binoculars to see the comet. And don't forget to bring home your award -- and that check for $1,000, too!)

We also have a public observing scheduled for **Tues., July 25th,** at Morrow Branch Library. To get there, go N on Hwy. 19/41 and bear right onto Hwy. 54 (Jonesboro Road) where it intersects with 19/41. Stay on 54 past Southlake Mall and the I-75 overpass, and turn right at the stoplight at Lake Harbin Road. Then turn left onto Maddox Road. Morrow library will be on the left side of Maddox Road.

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E-Mail Addresses. These are the e-mail addresses we have listed for FRAC members; please let the editor know promptly if yours is incorrect, outdated, or otherwise needs revising:

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Here's a Kwik Little Kwiz for you astrohistory buffs to play around with: 1. How many humans have walked on the Moon? 2. How many of them were American? 3. How many of them can you name? (Answers on p. 5)

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Old men and comets have been reverenced for the same reason, their long beards and pretenses to foretell events.

-Jonathan Swift (1667-1745)

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The Sky in June. <u>THE COMET COMETH!!!</u> If you didn't take up astronomy until recently, you may have missed the chance to get up close and personal with two of the most spectacular comets in recent memory **Hyakutake** (1996) and **Hale-Bopp** (1997), the latter of which, as everyone knows, was named for amateur astronomers **Mike Stuart** and **John Wallace.**

Hale-Bopp was the brighter and more compact of the two, an easy naked-eye "fuzzy star," beautiful in binoculars and stunning in a 'scope of any size. (The alien invasion force

hiding behind it wasn't visible in apertures of less than 36".)

As for Hyakutake -- it was **yr. editor's** first comet, and *gee!*, what a show it put on! **Larry Higgins** and others observing Hyakutake in April, 1996, at Indian Springs estimated the length of its tail as spanning more than *40°* of sky*!* Larry also notes that later studies have shown that, at its longest, Hyakutake's tail actually stretched nearly from horizon to horizon, although it did not show up that way in astrophotos.

Well, July brings us another potentially fine comet, **LINEAR.** (Its official designation is **Comet c/1999 S4**). If you're not the sort who enjoys getting up at 4-5:00 a.m. to go outside to look at the sky, though, you'd better plan to be looking for it sometime between the evenings of **July 20th** and the end of the month; otherwise, you're likely to miss it.

LINEAR's morning phase will take it through the constellations *Triangulum* and *Perseus*, where, on **June 30th-July 1st,** it will pass about two moon-widths W of the lovely open cluster **M34.**

As it shifts to an evening object, LINEAR will pass close to (and S of) the **Big Dipper** in *Ursa Major* between **July 21st-25th.** Then, continuing its eastward journey toward a rendezvous with the Sun, it will pass between the star *Denebola (Beta Leo)* and the famous (or infamous, depending on how much trouble it has given you in finding Virgo's Messiers) **Virgo Galaxy Cluster** on **July 31st-Aug. 1st.** By then, though, it may be too late for any quality observing from our location, the glow of evening twilight bleaching out the sky for early viewers and the comet's location near the W horizon hindering late viewing.

So your best bet is to join us at Cox Field on **Sat., July 22nd**, to spend some quality time with your friends in FRAC, studying what may or may not turn out to be an excellent comet. But you won't know unless you come out to see for yourself what all the fuss is about.

Comets are frequently described as "dirty snowballs" -- lumps of ice and rock that are thought to be leftover material from the formation of the solar system. The parts of a comet include the **coma** (the round, bright part that we see) and the **nucleus** (the icy lump of rock itself). Those parts of the comet are known collectively as its **head.** And then there's the comet's **tail.**

Most of a comet's lifetime is spent tailless, far from the Sun's glow in the icy nothingness of a region between **Pluto** and the nearest star known as the **Oort Cloud** (after its discoverer, Dutch astronomer **Jan Oort** (pronounced: **Celia Astin**).

When, for whatever reason, one of these untold billions of lumps of icy rock is nudged out of its lethargic meanderings and, drawn by the Sun's powerful gravitational influence, begins to move in a path toward the Sun, it is still tailless. As the comet draws inexorably nearer to the Sun and picks up speed, however -- normally, after it passes **Jupiter** on its inward journey -- the Sun's warmth eventually begins to thaw the comet's icy shell, releasing dust trapped in the ice to create a white or yellowish **dust tail** and evaporating gases that form a bluish **ion** (gas) **tail.** Only when the comet moves close enough to the Sun for its heat and energy to affect the comet does a tail develop; inmany cases, tails never develop. And occasionally a comet will develop several tails.

Because solar wind (a stream of charged atoms flowing from the Sun) and the pressure of sunlight force the released gases and dust away from the Sun, the comet's tail(s), if they develop, always face away from the Sun.

Whatever the case, the tail eventually fades away to nothing after the comet rounds the Sun and moves ever farther from its warming influence.

One of the great joys of comet watching lies in the fact that *no two of them ever look alike or act alike.* Size, age, the amount of ice remaining, and many other interacting factors determine what the comet will look like; the Sun's influence, and that of the planets it passes on both its inner and outer journeys through the solar system as well, determine where it goes. Some comets (e.g., **Halley's Comet**) attain orbital status, remain in the solar system and repeat their gauntlet run among the planets and around the Sun at predictable intervals; others

either crash into the Sun or are flung far out in space, never to return.

Unfortunately, the same cannot be said for telemarketers who call at suppertime.

The Comet Observation Home Page is at http://encke.jpl.nasa.gov .

Elsewhere, in the July issue of *Astronomy* (p. 69) **Martin Ratchiffe & Alister Ling** point out that, on **July 31st,** "You can catch an asteroid, globular cluster, and planetary nebula in one field of view" in a telescope of 8" or larger. The globular cluster is 9th-mag. **NGC 6638**, a Herschel 400 object; the planetary nebula, **NGC 6644** (mag. 11.5); and the asteroid is 10th-mag. **10 Harmonia,** which, on the evening of the 31st, will be about two pinky-widths N of 6638 in your low-power field of view.

On July 31st, you can find the trio located 1/2° E of the mag. 2.8 star *Lambda Sgr,* in the same low-power field of view.

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An Economical "Next" Star Atlas

book review by
Steven "Saratoga Smitty" Smith

If you pay attention to things like authors of sky atlases, you'll probably recognize the name **Wil Tirion**, whose works include *Sky Atlas 2000, Cambridge Star Atlas* and the subject of this review, ***Bright Star Atlas*** ($9.95, available from Willman-Bell, Inc.).

Bright Star Atlas (hereafter referred to as **BSA**) contains 32 9"x12" pages and displays the sky on ten full-page maps that appear to be the same ones used in *Cambridge.* These maps, each showing a different section of sky, plot the locations of stars down to magnitude 6.5 and galaxies down to mag. 10.2. Facing pages contain data on the objects -- double and variable stars, nebulae, clusters and galaxies -- that appear on the maps.

Strong Points. BSA contains the same fine maps as those in *Cambridge.* The cost -- $9.95 -- is half that of *Cambridge* ($21.95) or *Seasonal Star Charts ($19.95),* and 1/3 that of *Sky Atlas 2000* or *Norton's Star Atlas* ($29.95), the updated golden oldie that many of today's astronomers such as **David Levy** were brought up on. Many of the plotted objects on the **BSA** maps are visible in binoculars or small telescopes.

Weak Points. The seasonal orientation maps are not as easy to use as a planisphere, nor do they show how the sky moves as well as a planisphere does. Too, the **BSA** pages are not laminated, so you'll have to be careful not to let the dew settle on them. (On the other hand, I saw a laminated version selling for $24 at the Peach State Star Gaze.) There are no lines linking the major stars to show you the constellations' basic shapes on the sky maps.

Conclusion. I still think the best beginners' atlas is *Seasonal Star Charts,* which also appears as *Celestron Star Maps* and *Meade Star Maps. SSC* has a planisphere on the front cover, and its charts are laminated and have black lines connecting the stars that form the constellations' shapes.

I do, however, recommend **Bright Star Atlas** as the beginner's next step after learning the sky and how to use an atlas. It can also be useful to experienced observers due to its low price and the fact that its unlaminated pages can be written on. You could note on the map that **NGC 7009** in *Aquarius is* ***"Saturn Nebula"*** -- or that **NGC 253** in *Sculptor* is a good binocular galaxy. By marking your favorites you'll know when they're up at a glance.

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Answers to the "Kwik Little Kwiz" on p. 3: (1) 12; (2) 12; (3) Neil Armstrong, Edwin "Buzz" Aldrin, Pete Conrad, Alan Bean, Alan Shepard, Ed Mitchell, David Scott, Jim Irwin, John Young, Charles Duke, Gene Cernan and Jack Schmitt.

Although **Ken Walburn** has never set foot on the Moon's surface, it's said that he does a *wicked* moon walk under the right conditions.

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