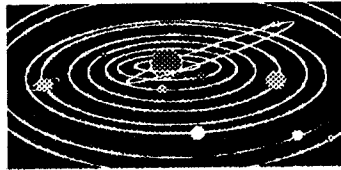


# THE FLINT RIVER OBSERVER



Vol. 2, No. 7

FLINT RIVER ASTRONOMY CLUB

September, 1998

**Officers:** President, Larry Higgins (227-2233); 1st Vice President/newsletter editor, Bill Warren (229-6108 / e-mail: warren1212@mindspring.com; 2nd Vice President/Secretary-Treasurer, Ken Walburn (P. O. Box 1179, McDonough, GA 30253 / 954-9442; AICor, Neal Wellons (946-5039); Librarian, Keith Cox (227-8171); Observing Chairman, Steven "Smitty" Smith (583-2200); Telephone/Hospitality Committee Chairman: Dan Pillatzki (707-0270). Club mailing address: 1212 Everee Inn Road, Griffin, GA 30224. All of these phone numbers have 770 area code prefixes.

Please notify **Bill Warren** and **Neal Wellons** promptly if you have a change of address.

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**Club Calendar.** **Thurs., Sept. 10:** Club meeting (Beaverbrook, 7:30); **Fri., Sept. 11:** Beaverbrook "First Light"/ FRAC joint observing (Fair Oaks Farm, at dark); **Fri.-Sat., Sept. 18-19:** deep-sky observings (Cox Field, at dark); **Fri., Sept 25:** Beaverbrook "Eatin' Greetin' Meetin'" night, observing for BB PTA at Fair Oaks Farm afterward. (See p. 2.)

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**Vice President's Message.** The more observant among you will note that my e-mail address has changed -- hopefully, for the better. Bye-bye, AOL, hello Mindspring. My new e-mail address is listed above.

I encourage you to attend our September meeting, at which time **Smitty** and **I** will discuss the various observing programs offered by the Astronomical League. There's

something for everyone here, with achievement pins and certificates available for binocular and telescopic observers alike, regardless of your level of experience or area of special interest. These observing programs, offered free of charge to all AL members -- and that includes *you* -- involve nothing more complicated than tracking down and observing certain celestial objects in the category of your choice and, upon completion, turning in your observing logs to **Larry Higgins**, **me**, or **Smitty**, our Observing Chairman, for verification.

Most of you know about the Messier Club -- but there's also the Binocular Messier Club, the Deep Sky Binocular Club, the Lunar Club, the Double Star Club, the Herschel 400 Club, the Urban Observing Club, the Meteor Club, the Sunspotters Club, and others as well. The Lunar, Meteor and binocular clubs are ideally suited for those of you who are just starting out in astronomy and don't have a big telescope at your disposal. Although these programs are referred to as "clubs," there's nothing to join since you're already a member of AL; and there's no time limit on how long you take to find and observe everything in a particular program, either. Just attend next month's meeting, get a copy of the form(s) for the activities you might like to pursue, and let 'er rip.

Such programs serve to focus your observing in the direction of whatever equipment you have and whatever personal goals you set for yourself, however bold or modest they may be. As anyone who is or has been pursuing one or more of these programs will tell you, they tend to bring a certain sense of urgency to your getting out under the night sky to find and observe items on your list --

which is, after all, what most serious stargazing is all about.

At any rate, we'll discuss the AL observing programs at our Sept. meeting at Beaverbrook, and you can pick up copies of whichever programs you think you might be interested in pursuing.

We're going to a slightly smaller print format starting this month, which may slightly inconvenience those of you who wear reading glasses but won't bother **Mitch Hammond** at all since he can't read. (Speaking of Mitch, it looks like the only way we're ever going to get him back to our club observings is to tell him that somebody slipped a copy of the Sports Illustrated swimsuit issue into the constellation *Ophiuchus*. He'll have to come then, because he'd never find *Ophiuchus* by himself.)

Finally, in the membership packet you should have received by now, Cox Field is the "Williamson Observing Site" referred to on the map. (We didn't name it Cox Field until after the map was drawn, and I'm too lazy to redraw it and too cheap to buy White-Out to correct it.) To get to the observing site, turn directly onto the field -- it's grassy, and about 30 yards wide and maybe 250 yards long -- after traveling 3/4 mile from Hwy. 362 on unpaved Turner Road. Be sure to use the turnoff; otherwise, you'll wind up in Mr. Cox's front yard about 3/4 mile farther on.

-Bill Warren

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**Last Month's Meetings/Activities.** Our July Cox Field observing fell prey to bad weather, thanks to **Smitty's** unfortunate decision to purchase a new Meade 24.5mm Super Wide eyepiece that attracts clouds like Monica Lewinsky attracts lawyers and reporters. Thus, the title of "Club Jinx" passes from **Tom & Katie Moore** to **Smitty**, who now can enjoy wide-field closeups of clouds passing by overhead.

We had 7 attendees and 2 late arrivals for our **Sept. 13th** club meeting; **Smitty** offered a multitude of tips for cleaning and taking care of

eyepieces. Our Perseids meteor party was clouded out. Thanks, **Smitty**, for the presentation, and for the clouds afterward.

**Dan Pillatzki** was in the hospital for about a week in August, the result of having gotten too friendly with a Portuguese man o' war while vacationing at Panama City Beach. **Dan** quickly gained a newfound appreciation for **Kathy's** home cooking, although he said the hospital's menu of baked roadkill was in fact quite tasty.

**Ken Walburn** was also hospitalized briefly in August, with migraine-like symptoms; at the risk of making light of a disturbing situation, **Ken**, all of us in FRAC are confident that, when they examine inside your head, they'll find nothing there.

A total of 24 people enjoyed crystal-clear skies and unseasonably cool nights at our **August 21st-22nd** Cox Field observings. **Katie Moore** found 20+ Messiers on Friday night, and **Dan Pillatzki** (rhymes with "Glmfrbrzzlgl") did likewise on Saturday. **Dan** also brought refreshments for both nights. Thanks, **Dan**. **Mike Stuart** stayed till about midnight on Saturday and raised his total to 62 Messiers. **Dr. Richard Schmude** studied variable stars, **John Wallace** found all the remaining Messiers on his list that aren't in the Virgo Cluster, **Tom Moore** dozed off under a blanket while **Ken Walburn** stayed up long past his usual 7:30 bedtime. All of the Saturday attendees enjoyed the sight of Jupiter's moons *Io* and *Callisto* transiting the planet, tiny black dots marching slowly but steadily across its banded face.

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**Upcoming Meetings/Activities.** Our club meeting will be at 7:30 on **Thurs., Sept. 10th**, at Beaverbrook. The topic will be "AL Observing Programs."

On **Fri., Sept. 11th**, we'll hold our regular BB/FRAC joint observing at Fair Oaks Farm.

Our Cox Field observings will fall on **Fri.-Sat., Sept. 18th-19th**; the new Moon will be on the 18th, so both nights will be excellent for deep-sky observing if **Smitty** can be

persuaded to leave his new eyepiece home.

We'll be at Fair Oaks Farm on Fri., Sept. 25th, to hold an observing for Beaverbrook PTA. It'll be their annual "Eatin', Greetin' Meetin'" night, so if you'd like a free chicken dinner be at the school as close to 6:30 as you can make it. We'll go out to Fair Oaks Farm from there and set up.

Dr. Richard Schmude, Gordon college professor and a nationally recognized planetary researcher, will speak at our October meeting at Beaverbrook. Having already taken us to Mars at the June, '97 FRAC meeting, Richard will take us up close and personal with Jupiter this time around. If, as most of us are, you're interested in knowing more about the planets that comprise our solar family, you won't want to miss Dr. Schmude's dynamic and informative presentation.

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**Renewals Due Sept. 1st.** Club members whose renewal dates are 09/98 include: **Ron Harrison and John and Tamara Priear.**

\* \* \*

**The Sky in September.** Jupiter, up all night, continues to dominate the night sky in September. Reaching opposition (the point in its orbit where it is directly opposite the Sun from our view) at mid-month, it will be a massive 49" in dia., i.e., slightly less than Ken Walburn's waistline or Mitch Hammond's I.Q.

Saturn trails Jupiter by 35° -- that's an outspread pinky-to-thumb width of one hand + an index finger-to-pinky width of the other hand -- and is a wonderful observing target in any telescope. The rings are tilted down toward us now, offering a superb view of their composition, unlike 1994 when they were edge-on to us and we couldn't see them at all.

Uranus and Neptune rejoined the nighttime planetary parade in August; the Sept. issue of *Sky & Tel* has a finder chart on p. 110.

Mercury, Venus and Mars are still "morning stars," low in the western sky and

best seen about 30 min. before sunrise.

Other highlights of the September night sky include: the lovely **Ring Nebula (M57)** in *Lyra*, spectacular at 150x; **Albireo (Beta Cygni)**, the lovely golden yellow and blue double star at the head of the Swan or foot of the Northern Cross, whichever way you see it; **Veil Nebula (NGCs 6960, 6992-95)**, spectacular with a nebula filter; the **Blinking Planetary (NGC 6826)**, a planetary nebula in *Cygnus* whose 11th-mag. central star blinks off when you look directly at it and on when you use averted vision. When done rhythmically, the effect is like watching a taillight's turn signal indicator flashing; the **Coathanger (Collinder 399)**, a binocular asterism located NE of the constellation *Sagitta* (the Arrow) that looks exactly like its namesake; and **Dumbbell Nebula (M27)**, a large and beautiful planetary just N of the point of *Sagitta*'s arrow.

\* \* \*

Then, there is this, from Vincent Van Gogh in a letter (1888) to his brother Theo: "*One night I went for a walk by the sea along the empty shores. It was not gay, but neither was it sad -- it was -- beautiful. The deep blue sky was flecked with clouds of a blue deeper than the fundamental blue of intense cobalt, and others of a clearer blue, like the blue whiteness of the Milky Way. In the blue depth the stars were sparkling, greenish, yellow, white, rose, brighter, flashing more like jewels than they do at home, even in Paris: opals, you might call them, emeralds, lapis, rubies and sapphires.*"

Or this, from me:

#### Summertime Observing Woes

*I think that I shall never see*

*A sky that's clear and insect-free.*

*Unless the clouds and humidity fall,*

*I won't see anything at all.*

Kinda brings tears to your eyes, doesn't it?, like spraying yourself right in the face with

insect repellent.

\* \* \*

### The Fine Art of Drawing Nebulae

article by Rich Jakiel

*(Editor's Note: This article, which has appeared twice in the Focal Point, AAC's newsletter, and in Tom Clark's Amateur Astronomy magazine as well, has also been accepted for publication by Astronomy magazine. Rich has been recognized internationally for his fine drawings, and we're proud to present his article in the Observer in two parts. Here is Part One.)*

While doing research, I love spending time browsing through mid- to late-19th century astronomical journals. They often contain plates of drawings of various deep-sky objects, and many of them are so precisely drawn that it's easy to recognize the object without referring to the accompanying text. The drawings of spiral nebulae by William Parsons (Lord Rosse), Lassell's sketches of the Orion Nebula and Trouvelot's illustrations of globular clusters are beautiful and timeless. How did they execute such exquisite deep-sky vistas? As the old saying goes, it really isn't as hard as it looks.

Drawing is a form of self-expression in which the mind, eye and hand work together to produce a record of visual impressions. In carefully examining those old plates, it's not difficult to sense what the observer experienced as he executed his drawing. Though astrophotography and CCD imaging are now the media of choice for the accurate recording of details, drawing is still the best means to record the observer's visual impressions. Unlike other forms of astro-imaging, drawing is an inexpensive means to make a permanent record of your observations.

As you execute a drawing, you will also refine your observing skills. The process isn't instantaneous, though; you must spend time focused on a particular object. While some

objects may require only a few minutes, others such as large, complex M17 may take one or two hours of telescope time.

**Tools of the Trade.** One of the most important steps is making a good field drawing, or rough sketch of the object, while observing. Making a black-on-white, or "negative," drawing is by far the easiest kind. It needs not be a masterpiece but rather an accurate record of what you saw. You'll make notes and sketch out the fine details; afterward, you can make the finished drawing at home.

To make a good field drawing, you'll need the following equipment: paper, clipboard, red flashlight (variable intensity preferred), pencils and a good eraser. The paper should be a clean, unlined, white, medium weight variety. I often use good copy paper for my field work. Spiral bound sketchpads are also an excellent means to keep your field work together in one place.

The eraser is your friend. You can actually draw with an eraser, and make fine details including mottling of nebulae or dark lanes in galaxies. The best eraser for the job is the soft, pliable art gum variety found in art supply stores. Costing less than a dollar, they can be molded into any shape you wish; I often form a point and "draw" (erase!) in delicate details. You should try to avoid using erasers on the end of a #2 pencil: they have harsh abrasives and can destroy the texture of the paper if used too liberally.

When it comes to pencils, not all are created equal. You will quickly find out that, to get a good, solid black you will need either layout or charcoal pencils. This isn't critical in making field drawings, but for good finished astro-drawings you will need the full range of values that these pencils can provide.

(This is the end of Part One. Part Two will appear in next month's newsletter.)

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# Beginner's Star-Hops; September, 1996

By Art Russell

At long last, September has finally arrived. Anticipating its arrival, we hope for cooler weather and clearer skies when the first breezes of Autumn will finally dispatch the summer's impenetrable haze. No more evenings lost peering into skies that for all intents and purposes have the limiting magnitude of skim milk! First and foremost, this month brings us one of the best total Lunar eclipses visible in eastern North America until after the turn of the century on the evening of **26-27 September!** With luck, we'll even have the weather to allow us to see it! The eclipse will last over 4 hours (**812PM-1230 AM**) during which we should be able to see the Moon slip into the darkest part of the Earth's shadow. At the same time, be sure to look for **Saturn** about 30 south of the Moon at totality. The deep sky junkies among us may even be able to bag a few galaxies at the same time, including 14th magnitude **NGC 78** which will be less than a degree southeast of the Moon. Who says you can't go galaxy hopping at the same time there is a full moon in the sky?!

This month's star-hops take us directly overhead and into "**Dobson's Hole**." "**Dobson's Hole**," or more properly, the zenith, is that area of the sky in which it is most difficult to maneuver alt-azimuth, or dobsonian style, telescopes. This month "**Dobson's Hole**" frames the area of the constellation Cygnus and the nearby constellations of Lyra, Vulpecula, and Sagitta. Here, we'll star-hop to two of the northern hemisphere's finest planetary nebula, **M57**, the "**Ring Nebula**," and **M27**, the "**Dumbbell Nebula**." We'll also take in several double stars, *Albireo*, and *Epsilon Lyrae*; two open clusters, **M29** and **M39**; and two globular clusters, **M56** and **M71**, as well. That gives us a pretty full agenda for this month, so let's head outside under dark skies and get started!

**Star-Hop #1; M29, NGC 6913.** Directly overhead this month is the constellation Cygnus, the "**Swan**," also known as the "**Northern Cross**." As we look directly overhead we'll find the zenith about 2 degrees, or about the width of two fingers held at arms length against the sky, away from *Eta (η) Cygni*, the middle star in the neck of the "**Swan**," which itself points to the southwest. Moving back to the northeast in Cygnus to its central star, *Gamma (γ) Cygni*, our first star-hop this evening is to the open cluster **M29**. This open cluster is a little less than 2 degrees to the south-southeast of *Gamma (γ) Cygni*, and is really best seen in binoculars as it sometimes becomes almost indistinguishable from neighboring background stars in larger telescopes. Take your time to look over the field and properly identify **M29**. This is important as Cygnus is astride the northern Summer Milky Way with its myriad stars and seemingly countless clusters. In binoculars, **M29** is very easily seen as a very small open cluster with perhaps 6 stars visible in averted vision. Its remaining stars were not visible in direct vision, but rather appeared as an embedded nebula. In a moderate sized telescope at low power, the cluster was unimpressive with no concentration of stars. Moreover, there may appear to be a distinct "H" pattern present.

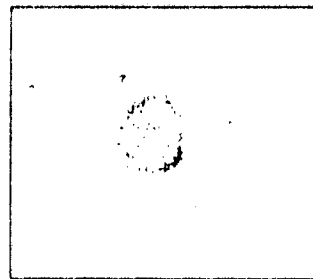
**Star-Hop #2; M39, NGC 7092.** Locating **M39**, takes a bit of work on our part. First locate the stars *Delta (δ) Cygni*, and *Deneb, Alpha (α) Cygni*, and then extend an imaginary line between them. Extend this line past *Deneb* for a distance a little less than that between *Delta (δ) Cygni*, and *Deneb*, and you arrive at the much less brighter 4th magnitude star, *Rho (ρ) Cygni*. As an aid, the distance between *Deneb* and *Rho (ρ) Cygni* is about 9 degrees or a little less than that spanned by your fist. From *Rho (ρ) Cygni*, **M39** is located a little more than 2 1/2 degrees to the north-northwest. Although **M39** is the brightest open cluster in the area, you'll find that it may a bit disappointing through the telescope where it appears as a poor cluster with only a few stars, most of which seem to be of the same apparent magnitude.

**Star-Hop #3; Albireo, Beta (β) Cygni.** The next star-hop is so simple that its really more of a star identification. *Albireo* marks the foot of the "**Northern Cross**" formed by the stars *Deneb*, *Gamma (γ) Cygni*, *Delta (δ) Cygni*, *Epsilon (ε) Cygni*, and *Albireo*. It is also known as the "**Hen's Beak**" and marks the southern end of the constellation Cygnus. However, more importantly, *Albireo* is also one of the most beautiful double stars for small telescope users. Take a look. Can you see its beautiful blue and yellow-gold component stars? A high power set of binoculars may split this star, but try to use a telescope at low

to moderate power if you have it available. Also importantly, don't forget *Albireo's* location. We'll use it as the jumping off point for our following star-hops.

**Star-Hop #4; Epsilon ( $\epsilon$ ) Lyrae, the "Double-Double."** Our next star-hop starts at *Albireo* and takes us to the constellation Lyra, the "Lyre," or harp. Locating Lyra from *Albireo* is relatively easy because its most prominent star *Vega*, *Alpha* ( $\alpha$ ) *Lyrae*, is the second brightest star in the northern skies. From *Albireo*, *Vega* is 15 degrees, or the distance spanned by your hand's first and last fingers, along an imaginary line to the northwest. Once there, you can't help notice *Vega*. Once you've located *Vega*, you're just a short hop away from **Epsilon ( $\epsilon$ ) Lyrae**, one of the most famous double stars in the sky, as well as being one of the finest. In fact **Epsilon ( $\epsilon$ ) Lyrae** is not a double star at all. Rather, it is a quadruple star. **Epsilon ( $\epsilon$ ) Lyrae** is a little more than 1 1/2 degrees (a little more than the width of your forefinger) northeast of *Vega*. Alternatively, **Epsilon ( $\epsilon$ ) Lyrae** also forms the northern most apex of an equilateral triangle consisting not only of itself, but *Vega* and the star *Zeta* ( $\zeta$ ) *Lyrae* as well. Take your time here. You don't need a telescope to "split" or resolve the separate components of the "Double-Double," a set of binoculars will do the job nicely. Once you arrive, you'll be rewarded with one of the most interesting double stars in the sky.

**Star-Hop #5; M57, NGC 6720, the "Ring Nebula."** Once you've found *Vega*, you are also very close to the planetary nebula, **M57**. From *Vega*, within the constellation Lyra, head southeast toward the two northern "pointing stars" for **M57**, *Zeta* ( $\zeta$ ) *Lyrae* and *Delta* ( $\delta$ ) *Lyrae*. From *Zeta* ( $\zeta$ ) *Lyrae*, head south-southeast to the two southern "pointing stars" for **M57**, *Beta* ( $\beta$ ) *Lyrae* and *Gamma* ( $\gamma$ ) *Lyrae*. **M57** is located almost exactly between *Beta* ( $\beta$ ) *Lyrae* and *Gamma* ( $\gamma$ ) *Lyrae*. **M57** is not a good object for viewing with normal sized binoculars because of its relatively small size and the fact that normal binoculars will not provide enough magnification. However, large astronomical binoculars (11X80 and larger) under dark skies and ideal conditions may show **M57** as a pale, soft appearing disk, whose edges gradually fade into the background sky.



M57; 572X

**M57** maintains its disk like appearance in a telescope and takes on an annular, or ring like, appearance under higher powers. Take time to find **M57**. You'll be well rewarded. Moreover, since its position is so well known and well marked in the sky, finding **M57** is often one of the first objects a beginner seeks when learning how to use a telescope.

**Star-hop #6, M56, NGC 6779.** Located along the same imaginary we used when locating *Vega* from *Albireo*, the globular cluster **M56** is located about 3 degrees, or 1/5 the total distance, from *Albireo* to *Vega*. In binoculars, **M56** is easily found and appears as a disk shaped soft edged glow which brightens toward its center. Since this cluster is so easy to find, don't miss it enroute to *Vega*!

**Star-Hop #7, M27, NGC 6852, the "Dumbbell Nebula."** The star hop to the planetary nebula, **M27**, in the 4th magnitude constellation Vulpecula, is a natural continuation of a star-hop from *Albireo* to *Vega*, except in the opposite direction. In fact, it uses the same imaginary line, with *Vega* and *Albireo* as pointer stars! Using this imaginary line, **M27** is located only about 8 degrees, or a bit less than the distance spanned by your fist, away from *Albireo*, except, in this case, to the southeast. Alternatively, you can also locate **M27** by first locating Vulpecula and then proceeding to **M27**. Starting at *Albireo*, *Alpha* ( $\alpha$ ) *Vulpeculae* is only a little more than 3 degrees to the south-southwest. From there, hop over to *13 Vulpeculae* which is a little more than 5 degrees, or three fingers width, to the east-southeast. From *13 Vulpeculae*, **M27** is only about 2 degrees to the southeast. **M27** is visible in binoculars as a soft, roughly square glowing cloud. However, using a telescope quickly tells you that this is a spectacular



M27; 254X

object. In fact, M27 is the second largest and brightest of all planetary nebula. At high power, M27 takes on a distinctly oblate or foot ball shape with the area of greatest brightness confined to a rectangular area near its core and areas of lesser brightness extending along either end of its longitudinal axis.

**Star-Hop #8, M71, NGC 6838.** Our last star-hop for the evening takes us to the relatively small constellation Sagitta and its moderately bright globular cluster, M71. There are several ways to locate M71. From the constellation Vulpecula, start at the star 13 Vulpeculae. M71 is about 5 degrees directly south on a line from 13 Vulpeculae. Alternatively, starting in the constellation Sagitta proper, M71 is located about midway and south of the line between Gamma ( $\gamma$ ) Sagittae and Delta ( $\delta$ ) Sagittae. In a moderate power telescope M71 is clearly seen with the possibility of dark lanes within the globular cluster. Can you find them?

