THE FLINT RIVER OBSERVER

Vol. 1, No. 1 **FLINT RIVER ASTRONOMY CLUB** **March, 1997**

Officers: President, Larry Higgins (227-2233); 1st Vice President/newsletter editor, Bill Warren (229-6108); 2nd Vice President/Secretary-Treasurer, Ken Walburn (954-9442); AlCor, Melanie Handy (228-6214). Club mailing address: 2431 Old Atlanta Road, Griffin, GA 30223

Club Calendar: Mar 7: observing session (6:30, Sunnyside); **Mar. 13:** meeting (7:30, Sunnyside); **Apr.3:** Special Hale-Bopp observing session (6:30, Williamson)

The March 13 club meeting will have as its guest speaker **Jerry Armstrong**, 1st Vice President of the Atlanta Astronomy Club. An experienced, dedicated stargazer and talented artist who specializes in astronomical themes, Jerry will bring along some of his hand-painted tee shirts for sale at $30. Considering the incredible artwork involved, it's a steal at that price. He recently sold $3,400 worth of shirts at a Florida star party.

Jerry's topic will be his specialty, comets, which is appropriate with Comet Hale-Bopp set to dazzle viewers worldwide throughout March-April. In the past 34 years, Jerry has observed 172 comets and 500 asteroids. He also discovered Supernova 1994i in M51, fragment B Comet Machholz 2, ring galaxy K26 in Lyra, and a light echo nebula. Jerry is presently writing a book on comets.

Jerry is the first in a series of outstanding speakers that Larry is lining up for us. In the months to come we'll hear **Rich Jakiel** and **Art Russell** from the Atlanta Astronomy Club speaking on the Virgo Cluster of galaxies and star-hopping, respectively; and **Richard Schmude**, astronomy professor at Gordon College and member of AAC and our own Flint River Astronomy Club as well, will talk to us about the planet Mars. In all honesty, we can't think of anyone we'd rather have kicking off our guest speaker series than these gentlemen. You'll think so too after you've seen and heard their presentations.

We'll have a special Hale-Bopp observing session on Thursday, April 3rd. We'll meet in Williamson and go to the observing site from there.

We're preparing a membership list of names, addresses and telephone numbers for distribution, probably in May.

If you have information regarding club activities or news that our members should know about -- or if you want to write an article for the newsletter -- call or mail your information to me at 638 Pinehill Road, Griffin, GA 30223. The deadline for receiving news items, etc., is the 28th of every month. After that date, it will have to go in the following month's **Observer**.

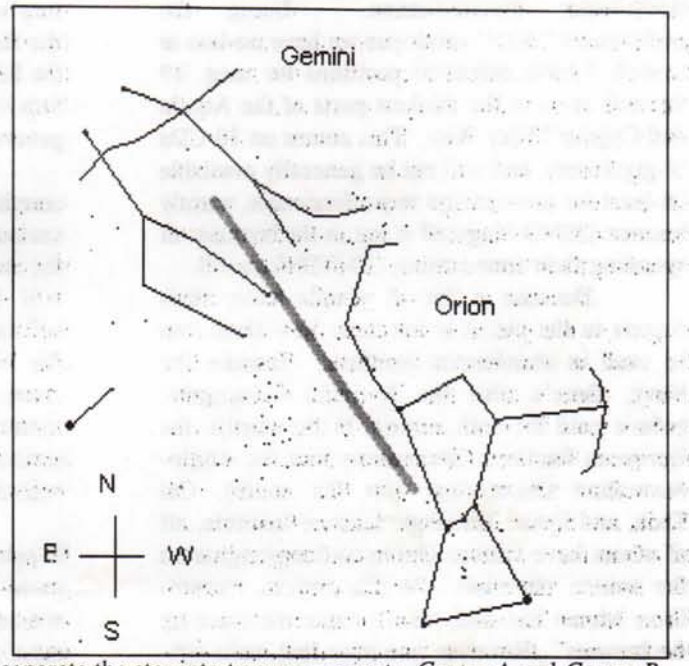
We're very happy to announce that Art Russell, whose "Star Hops" appear in every month's AAC Focal Point newsletter, has graciously consented to let us use his articles in our own newsletter. You'll learn a lot about the night sky and how to find things in it from Art's star hops.

And that's it for our inaugural edition of the **Flint River Observer**. May all your skies be clear, and your horizons pollution-free.

Beginners' Star-Hops; February, 1997

By Art Russell

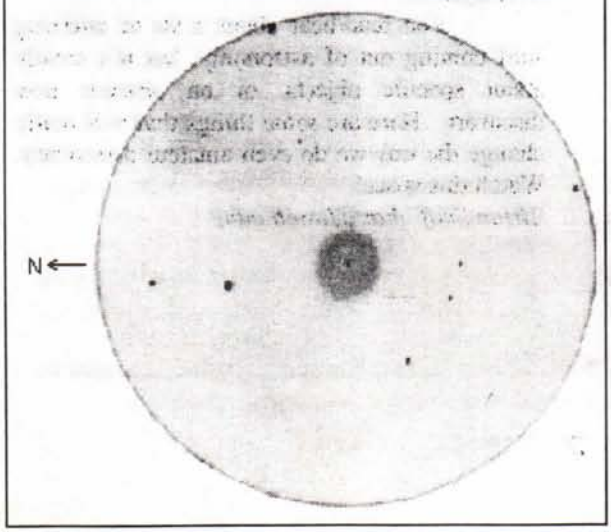
Okay, so it's the dead of winter. It really hasn't been that cold has it? After all, how much snow have we had this year, or even since the "Great Blizzard of '93?" Not much. Certainly not enough to stop those of us who are slightly enamored of the stars and the deep-sky objects dwelling therein. Other than the clouds that always seem to plague us during winter, this is arguably the best time of year for observing because of low levels of humidity and suspended particulates (AKA: HAZE!).



Last month we visited the ***Orion Nebula*** complex. The constellation Orion conveniently points the way to the nearby constellation of Gemini, the **Twins**, the location of this month's star-hops. Locating Gemini from Orion is relatively straight forward. Starting at the three stars comprising ***Orion's Belt***, *Zeta (ζ), Epsilon (ε)* and *Delta Orionis (δ)*, Gemini is less that 40 degrees, or twice the distance spanned by your hand with thumb and "little finger" outstretched against the sky at arm's length,. to the northeast. Once we've found Gemini, the rest of our star-hops this month are relatively simple.

Star-Hop#1. Castor, Alpha (α) Geminorum. *Castor* is one of the most interesting "double stars" under night skies. Amateur sized telescopes can easily separate the star into two components, *Castor A* and *Castor B*. There is another companion star, *Castor C*, but shining at magnitude 9.1 it is much harder to find. Moreover, each of these component stars is itself a double star as well, giving us a six-star system! Locating *Castor* is easy once you've identified the constellation. Shining at about magnitude 2, it is very prominent, and located to the about 4 degrees, or a little less than the width of three fingers, northwest of the brighter star *Pollux*. Remember how to find *Castor*, as it is our jumping off point for the rest of this month's star-hops.

NGC 2392, the Eskimo Nebula @572X



Star-Hop#2. NGC 2392, the Eskimo or Clown Face Nebula. Starting at *Castor*, locate the star *Pollux* to the southeast of *Castor*. From *Pollux*, extend a line southwest about 8 degrees, or the width of four fingers against the night sky, to the star *Wasat, Delta (δ), Geminorum*. From *Wasat*, extend an imaginary line a little more than 2 degrees, or about twice the distance spanned by our little finger against the sky, to the southwest to the planetary nebula, **NGC 2392**. Although moderately faint, **NGC 2392** is a relatively easy planetary nebula to find in moderate sized telescopes. At 259X and an OIII filter, the nebula appears evenly distributed around the central star. Although the nebula fades off rapidly at edges there is a hint of a ring structure. At 476X with an OIII filter the central star fades, there is a greater impression of a ring structure.

Web page above to read about getting a copy of the CD this catalogue is on.

The catalogue everyone should be excited about is **"UA1.0".** This is real inventory of the Schmidt sky survey plates, done from the original plates (not copies), and reaching even fainter than you can see on the POSS prints, comprising 488,000,000 'detections', with some star/nonstar discrimination. Using the preliminary "A0.9" catalogue we have on-line at Lowell, I have extracted positions for mag. 19 variable stars in the thickest parts of the Aquila and Cygnus Milky Way. This comes on 10 CDs (6 gigabytes), and will not be generally available (at least for now) except to professionals, mainly because USNO-Flagstaff is not in the business of spending their time cutting CD-ROMs to sell.

Because a lot of people have their fingers in the pie, it is not clear how these can be used in commercial products. Besides the Navy, there's also the National Geographic (who's paid for both surveys in the north), the European Southern Observatory and the Anglo-Australian Observatory (for the south), Cal Tech, and Space Telescope Science Institute, all of whom have various claims and copyrights on the source material. As the project maestro Dave Monet has said, "don't make me wake up the lawyers". However, you guys that make sky-chart software ought to write Dave (dgm@nofs.navy.mil) to see what the prospects are downstream.

Catalogues of the near future (Hipparcos/Tycho, Millenium Star Atlas)

If you talk to anybody making star catalogues now, they'll all tell you that everything is going to be swept aside by Hipparcos. The Hipparcos spacecraft operated in the early 1990s to obtain parallaxes, positions, plus B and V magnitudes for stars. The results have been under tight wraps, but will be released in a few months. The parallax part of the mission (Hipparcos) produced parallaxes good to about 1 milliarcsecond (one thousandth of an arcsecond) and high-precision proper-motions for about 100,000 stars. Another instrument on the same spacecraft, called Tycho, has produced positions plus B and V magnitudes for one million stars---complete to mag. 10.5, and lots of stars to 11.5 (not quite as complete as the TAC).

Much more interesting for amateur observers is that a new large-scale star atlas, the "Millenium Star Atlas", is being produced from the Tycho data by Roger Sinnott and colleagues at Sky Publishing. When it comes out later this year, it will blow the Uranometria and Herald-Bobroff atlases out of the water. (Is it going to be perfect? No.) This is not just a rumor---they're taking orders! You can find out about the Hipparcos/Tycho mission and its products at the ESA Web site:

http://astro.estec.esa.nl/SA-general/Projects/Hipparcos/hipparcos.html

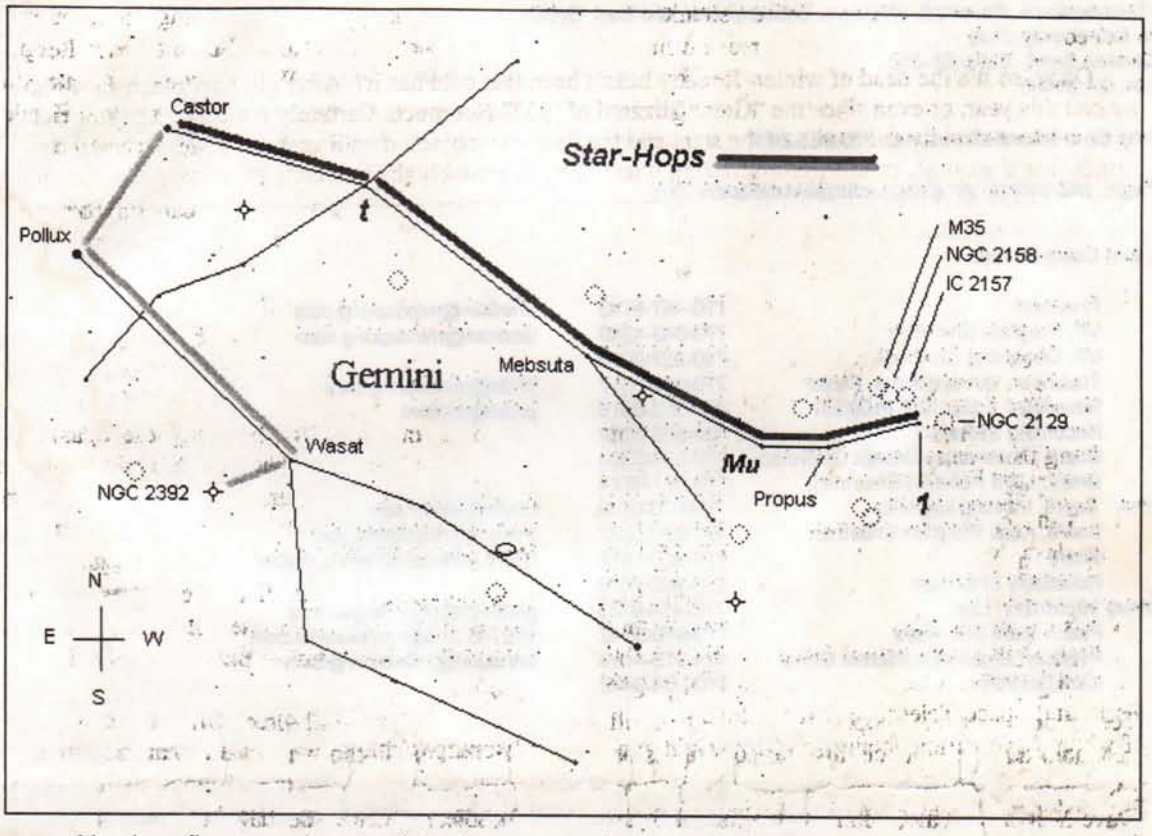
The ESA folks are taking orders for the complete set of books and CD-ROMs or for various major parts (including the atlas) until the end of January. The Sky Pub atlas of course will be more generally available. Again, software guys should find out about it now. See the Web page for sample catalogue pages, charts, and a price list (the prices are very reasonable---$400 for the complete package of sixteen bound volumes plus six CD-ROMs and software).

The high-precision positions from Hipparcos/Tycho will mean that all previous ground-based reference frames will become obsolete. Once the data become available to mere mortals this summer, _everyone_ will re-reduce their position catalogues using the Hipparcos stars as the reference frame. The GSC will be redone again, A1.0 will become A2.0 (or something), the Twin Astrograph Catalogue will get re-reduced; new star catalogues will be started to extend the high-precision to fainter limits. Already the USNO-Washington has proposed a digital sky survey to 15th magnitude that will have the same accuracy as Hipparcos.

You read/hear about a lot of amazing stuff coming out of astronomy, but it's mostly about specific objects, or an obscure new discovery. Here are some things that will really change the way we do even amateur astronomy. Watch this space!

\Brian Skiff (bas@lowell.edu)

Star-Hop#3. M35, NGC 2168. Starting at *Castor*, we'll next star-hop our way down the northern side of the constellation Gemini for our final star-hops. Extend a line about 5 degrees, or about the distance



spanned by three fingers against the night sky, west-southwest, to the star *Tau (τ)Geminorum*. From there, continue the line a little less than 8 degrees, or the width of four fingers against the night sky, to the southwest and the star *Epsilon (ε)Geminorum*. From there, extend a line about 2 degrees, or twice the distance spanned by your little finger, west to the star *Propus, Eta (η)Geminorum*. From *Eta Geminorum*, continue the line once again for about 2 degrees to the star *1 Geminorum*. Remember where *1 Geminorum* is located as it will be our base from which to locate all of our remaining deep-sky objects. From *1 Geminorum*, **M35** is located only about a degree and a half to the northeast. Here the open cluster, **M35** dominates the scene. At 62X in a moderate sized telescope, **M35** is well concentrated in a rich field of stars. Its structure is very distinct and also seems to have three point stars in center of the cluster.

Star-Hop#3. NGC 2158. **NGC 2158** is prominently visible in the south-west corner of the same field of view as **M35**, but if you miss it, its very close by, only about a half-degree to the west-southwest **M35**. At moderate magnifications, **NGC N2158** appears as a very soft irregularly shaped elongated body, gray-white in color. Some stars are visible in averted vision with 8 stars counted and concentrated in the center of the cluster. **NGC N2158** is easy to find and appears well detached from the background. At higher powers, the field of view is considerably darkened with the cluster having a total of 15 stars.

Star-Hop#4. IC 2157. Here's a tougher one to find. While you are looking at **NGC 2158**, don't miss a chance to track down **IC 2157**, another open cluster. **IC 2157** is a little less than a half degree west-southwest of **NGC 2158**, and like that open cluster, much smaller in comparison to **M35**. In larger telescopes at moderately high power, you may be able to make out **IC 2157** as a patch of nebulosity with no individual stars resolved.

Star-Hop#5. NGC 2129. Starting at *1 Geminorum*, **NGC 2129** is located less than 1 degree due west. At moderate magnifications the cluster is somewhat sparse with only about 40 members.

We're here to help! Here's how to reach us:

Address for New Memberships, Renewals, Magazine Subscriptions, and Book Orders:

Atlanta Astronomy Club
3595 Canton Road, Suite A9-305
Marietta, GA 30066

Atlanta Astronomy Club Information Line: 770-621-2661

Internet Home Page: http://stlspb.gtri.gatech.edu/astrobt/atlastro.html

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THE FOCAL POINT

Newsletter of The Atlanta Astronomy Club, Inc.

FROM:
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First Class

The Atlanta Astronomy Club Inc., the South's largest and oldest astronomical society, meets at 8:00 p.m. on the third Friday of each month at Emory University's White Hall or occasionally at other locations (check the hot line for details). Membership is open to all. Annual dues are $25 ($10 for students). Discounted subscriptions to Astronomy ($20), and Sky & Telescope ($27) magazines are available. Send dues to: **The Atlanta Astronomy Club, Inc., 3595 Canton Road, Suite A9-305, Marietta, Ga. 30066.**

Hot Line: Timely information on the night sky and astronomy in the Atlanta area is available on a twenty-four hour basis on the Atlanta Astronomy Club hot line: **770-621-2661.**

Check out our ASTRO discussion list on the Internet: ASTRO@Mindspring.com. Also visit our Internet home-page: **http://stlspb.gtri.gatech.edu/astrotxt/atlastro.html**

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