THE FOCAL POINT

The Atlanta Astronomy Club, Inc.

Vol. VIII No. 8 **January, 1996**

This Month's Meeting

Our next meeting of the Atlanta Astronomy Club will be at Emory University's White Hall at 8:00 p.m. on Friday, January 19. Jerry has arranged a unique program for us this month. Our visitors will be Galileo and Pope Urban VIII, who will engage in a lively debate. Jim Summers and Bill Smith will be our actors.As usual, refreshments and conversation will follow the program, as well as the "second meeting" at Jagger's Pizza. We hope you will join us for this fun filled evening. Looking ahead to February, remember that the meeting will be the SECOND Friday, *February 9*. Although not 100% confirmed at this writing, things look good right now that our special *guest speaker* will be Richard Berry, author and past editor of Astronomy Magazine. Mark your calendar!

This Month: Galileo and Pope Urban Meet Again

by Ken Poshedly

When Galileo Galilei died in 1642, he probably thought, Finally! Im outta here! No more arguments about science from those church folks! Having spent his life advancing science and inventing gizmos by the bushel, the guy spent his last years blind, under house arrest and forced to recant his views that the Sun is the center of the Solar System because his views differed with those Catholic Church. Not content to leave well enough alone, your Atlanta Astronomy Club is proud to bring back Galileo and his former friend and later detractor, Pope Urban VIII, in a program designed to illustrate just how wide their differences were. Even though Galileo and the pope died over 420 years ago, WE have the next best thing and look forward to a very theatrical night that will entertain as well as inform you. Like you might have heard, *NOBODY* expects the Inquisition! But you can see a little of what it must have been like Friday, January 19, at 8 p.m. at Emory Universitys White Hall.

Background

In opera its called a libretto, in baseball its called a scorecard. Anyway you look at it, you need to know who's coming from where. With that in mind, here's a little bit about Galileo and an even littler bit about Pope Urban VIII.

Galileo

Italian mathematician, astronomer, and physicist, Galileo Galilei was born in 1564 and died in 1642. He developed the astronomical telescope and was the first to see sunspots, the four main satellites of Jupiter, and the appearance of Venus going through phases, thus proving it was orbiting the Sun. In mechanics, Galileo discovered that freely falling bodies, heavy or light, have the same, constant acceleration and that a body moving on a perfectly smooth horizontal surface would neither speed up nor slow down. Galileo's work founded the modern scientific method of deducing laws to explain the results of observation and experiment (although the story of his dropping cannonballs from the Leaning Tower of Pisa is questionable). His observations were an unwelcome refutation of the ideas of Aristotle taught at the (church-run) universities, largely because they made plausible for the first time the heliocentric (Sun-centred) theory of Polish astronomer Nicolaus Copernicus.

Galileo's persasive *'Dialogo sopra I due massimi sistemi del mondo/Dialogues on the Two Chief Systems of the World'* 1632 was banned by the church authorities in Rome and he was made to recant by the Inquisition.

Galileo was born and educated in Pisa, and in 1589 became professor of mathematics at the university there; in 1592 he became a professor at Padua, and in 1610 was appointed chief mathematician to the Grand Duke of Tuscany. When tried for heresy in 1633, and forced to abjure his belief that the Earth moves around the Sun, Galileo is reputed to have muttered: *'Eppur si muove'* ('Yet it does move'). He was put under house arrest for his last years.

Galileo discovered in 1583 that each oscillation of a pendulum takes the same amount of time despite the difference in amplitude. He invented the thermometer

and a hydrostatic balance, and discovered that the path of a projectile is a parabola.

Galileo published *'De motu/On Motion'* 1590. Having made his own telescopes, he published his first findings in *'Sidereus nuncius/The Starry Messenger'* 1610; the book was a sensation throughout Europe. He summed up his life's work in *'Discorsi e dimostrazioni matematiche intorno a due nove scienze/Discourses and Mathematical Discoveries Concerning Two New Sciences'*. The manuscript of this book was smuggled out of Italy and published in Holland 1638.

Pope Urban VIII

Urban VIII (born Apr. 5, 1568, died July 29, 1644) was pope from 1623 until his death. A Florentine aristocrat named Maffeo Barberini, he was named a cardinal in 1606 and bishop of Spoleto. As pope, he encouraged the religious life by canonizing a number of saints and approving new orders. He revised the breviary, the missal, and the pontifical, and fostered missionary work by founding (1627) the Urban College of Propaganda. Urban also sponsored extensive building of military fortifications in the Papal States.

Urban's fear of Habsburg domination in Europe led him to favor France in the Thirty Years' War, although he tried to prevent Cardinal Richelieu's alliance with Sweden. Within Italy he was defeated in a war (1642-44) with the Farnese duke of Parma.

Urban was a noted scholar and poet and a patron of Giovanni Lorenzo Bernini. Despite his earlier friendship with Galileo, in 1633 he allowed the scientist to be imprisoned and forced torecant.
Bibliography: John, Eric, ed., *The Popes: A ConciseBiographical History* (1964).

Last Month

The December meeting of the Atlanta Astronomy Club was held Friday, December 8 at the Fernbank Science Center and was attended by approximately 50 persons. The evening's program consisted of a potluck dinner supplied by many AAC members. After dinner, most folks attended a the 8 p.m. Fernbank planetarium show on the Christmas Star, then returned to the main classroom for deserts and miscellaneous announcements.

Amateur Telescope Making Interest Group

by Ken Poshedly

Sounds rather ominous, doesn't it? Or maybe it sounds like something you think you **CAN'T** do. But au contraire, friends. We have in the Atlanta Astronomy Club walking-talking proof that you **CAN** build your own telescope—including the mirror! New member Mel Tolbert and longtime member Bill Black will host an organizational meeting at Bill's home in Lilburn on Saturday, January 27, beginning at 3 p.m. for those of you just itching to build a scope.

Bill, who has just completed construction of his own roll-off roof observatory, is equipping it with a homemade 13-inch Newtonian reflector. While he did have the mirror ground for him, he pieced the rest of the scope together on his own. The observatory building was built to accommodate a sloping backyard and can be disassembled for semi-permanent relocation at another site.

Mel, a machinist who has produced a number of telescope mirrors of various sizes, is able to start and finish a mirror in one weekend using well-known techniques that include a sprinkling of his own ideas. He even brought a sample of his mirror work to the AAC November meeting.

The January 27 meeting will include discussion on the future of Atlanta's only amateur telescope making group and what the immediate and long-range goals will be. After a dinner break at 5 p.m. or so at a nearby restaurant, the group will reconvene at Bill's home for more discussion and observing—skies and weather permitting.
If you're definitely interested in building a telescope, or are at least leaning that way and need a final shove, contact Bill at **(770) 925-9141**.

Ken Poshedly's Top Ten Reasons to Belong to the Atlanta Astronomy Club:

Everybody else seems to be doing it, so why not us? So the next time your friends or coworkers ask you why you belong, just rattle off this list:

10. Good practice for being one of the Wise Men in the annual Christmas pageant
9. Logical progression from children's game connect-the-dots to adult game(?) connect-the-stars
8. Fun and fascinating way to throw hundreds (*thousands*?) of dollars at a pipe mounted in the backyard
7. Removing assorted multi-legged beasties from the club's 20-inch and the warm-up shack
6. A chance to see people and animals in the sky and not get picked up for DUI
5. Hugh Downs like this stuff, too
4. A lifetime supply of *Mars* bars and *Milk Way* candy bars
3. Two words -- "Globular Clusters"
2. Use our nightscopes to help O.J. find the "REAL" killer
1. We will not rest until we *find Elvis*! (Haven't you heard, his *face* is on Mars! *-editor*)

MORE THAN PROGRAMS

by Alex Langoussis, President

While we have had some excellent programs at our meetings, and more are still to come, I would like to see our meetings be more than just announcements and programs. I would very much like to see more folks sharing with us what astronomy they have been doing lately. Did you take some pictures last month? Bring them to the meeting so we can all see them. Have you been observing lately? Where did you go? How was the sky? What did you see that really interested or impressed you? Share your experiences with us!

Perhaps you purchased some new equipment lately. Tell us what you got, and whether you like it or not. Are you working on any projects, such as the Messier or Herschel list? Tell us how it's going, and what things were surprises (good or bad!).

Also, please share with us any questions you may have. You don't need to wait until refreshments or pizza. A question or problem you may have with equipment or observing, if presented to everyone, will draw upon more expertise, and inform the rest of us as well. Chances are, if you have a question, there are others who have always wondered the same thing.

The purpose of the Club is to bring people together so that they may share their common interest of astronomy. And while the fine programs that Jerry has been giving us are educational and entertaining, keep in mind that our own membership is our greatest source of information and fun.

WEB PAGE REPORT

by Alex Langoussis

The Atlanta Astronomy Club's internet home page continues to draw plenty of visitors. The club has averaged over 700 visits a month the last 2 months. Many visits have been from around the world, from Sweden to New Zealand.

Doug Chesser's great computer art and Tim Puckett's images have added an extra flair to the page. We will soon be making available past feature articles from the Focal Point, as we have had requests from around the country for permission to reprint them. Kemper Smith will be helping with this part of the web pages.

Also this month, we added a link to member David Hanon's CCD images. We will gladly link up to other members' pages, as long as it is astronomy related. We also have added a page devoted to the upcoming Peach State Star Gaze. You will even be able to print out a registration form online!

For those of you with internet access, remember that most club news will appear hear first. So check us out!

A Free Gift

by Larry Higgins

Oooh....Aaahh ..Wow, that's *cool!* These were the sounds of both young and old as they peered through our telescopes the first time. From a football field in the light polluted skies of Forest Park Middle School, Ken Walburn, David Pendergrass and I treated 50 to 60 children and their parents to some of the brighter objects in the evening sky. This also happened to be my birthday, December 1st. To see the excitement on these people's faces made a great birthday gift for me.

Sometimes we get so bogged down with the technical aspects of our hobby that we tend to forget the simpler times we had in the beginning. Can you remember the rush of excitement you had the first time you saw *craters on the Moon*, or the *rings of Saturn*? Can you recall the first view of the moons around Jupiter or the Great Orion Nebula (M42)? If you can, then you might be able to feel what these newcomers to the "scope" felt.

Next time you are at a star party and someone walks up to you and says "..do you mind if I look?" , don't send them to someone else's telescope; you just *might* miss out on a free gift. Special thanks to Alex Langoussis for asking us to go, to Art Russell for giving us encouragement and to B.J. Furgason (and the Science Department) for inviting us. *(editor's note: I have held a number of observing sessions with budding young astronomers, and it's also been a rewarding experience.)*

ORION'S ERRATA

by Dave Riddle

I would like to point out a couple of errors I have stumbled across concerning the *NGC 2000.0* database and the *MegaStar Deep Sky Atlas* before I jump into my article . The first concerns ***IC 424*** , a faint reflection nebula in Orion . The Declination value is wrong . It is plotted 5 minutes too far north in the *MegaStar* program and this error could well frustrate your attempts to see this elusive little nebula .The *Uranometria 2000* plots ***IC 424*** in it's correct position . (Unfortunately , position errors are common in many astronomical catalogs . For example , a fairly recent study of planetary nebulae positions found errors as large as 9 arc minutes in the Perek and Kohoutek catalog . One catalog on extragalactic HII regions in NGC 6822 (Killen & Dufour) went to great lengths to correct for

atmospheric and instrumental distortions using complex formulae but was rife with simple typographical errors in the position column !)

Perhaps more interesting is the case of ***Cederblad 62*** , another dim reflection nebula in Orion . It too is plotted 19 minutes too far east in the *MegaStar* program (and I assume the *NGC 2000.0* database is wrong also as it is the source for the *MegaStar* position .) ***Cederblad 62*** is the same object as the " non-existent " ***NGC 2163*** . Also known as ***DG 87*** or ***GN 06. 04. 9*** or ***LH-Alpha 208*** , ***Cederblad 62*** is an example of a class of rare nebula known as " Bipolar " nebulae (the brightest example of a bipolar nebula is ***NGC 6302*** , the " Bug Nebula " in Scorpius) . The old cryptic NGC code describes this nebula as " EF, E, DIF, *11ATT S " which translates into " Extremely faint , Extended , Diffused , 11th Magnitude Star attached to the south " . ***Ced 62*** is involved in ***LDN 1574*** , a dark nebula of class 4 opacity . (The Lynds' Dark Nebulae Catalog rates the density of the obscuring clouds on an opacity scale of 1 to 6 . A class 1 is a thin nebula ; a class 6 is very dense . As a general rule the class 1 objects are seen only on photographs and are not visible in amateur telescopes . A class 6 should be easy to see if it is superimposed on a rich background of stars .) ***LDN 1576*** and ***LDN 1578*** (both class 4 opacity) lie just southward . 40 arc minutes to the north of ***Ced 62*** is ***Barnard 227*** , a " globule " class of dark nebulae . Globule dark nebulae are thought to be in a state of gravitational collapse and could possibly be the site of future star formation . ***Ced 62*** is correctly plotted on page 136 & 137 in the *Uranometria 2000* atlas . Take a look at this fascinating area of the sky this winter !

The bright planetary nebula ***PK 198-6.1*** (or ***Abell 12***) is not plotted on the *Uranometria 2000* charts . Glowing at a visual magnitudeof 12 and displaying a fairly large disc of 35" , this fine planetary lies only 1 minute west-northwest of ***Mu Orionis*** . I failed to see this nebula at the Winter Star Party using an excellent 20 inch reflector but I finally saw it with the club's 20 inch reflector when I used high power (341X) to separate the nebula from the overpowering glare of ***Mu Orionis*** . Some of the ***Abell*** planetaries are more spectacular than the *Revised New General Catalog* planetaries .

Sooner or later this winter every amateur astronomer will look at ***M42*** , the Orion Nebula . The first time I saw ***M42*** through our 20 inch reflector I was struck by the sight of an apparent ' hole ' surrounding the Trapezium . Although I like to imagine the ' hole ' as an area cleared of nebulosity by the hypersonic stellar winds of the Trapezium multiple star system , it is only an illusion . For the collector of astronomical trivia the hole is known as *Sinus Lamontii* (Lamont's Gulf) .

A huge sphere of glowing hydrogen surrounds the star ***Lambda Orionis*** , the northernmost star of the small triangle of stars that forms Orion's ' head ' . I present this nebula as a challenge to visual observers . (Excuse me while I go off on a tangent but the nature of the ' challenge ' deep sky objects have become much more difficult in the last 20 years . I recall when seeing the Veil nebula , M33 and NGC 7293 , the ' Helix ' planetary , were considered a true test of observing skill . These objects are routinely visible in 7 X 50 binoculars under a good sky ! . I have seen M33 with my unaided eyes and there are reports that the Helix is a naked eye object from the Southern Hemisphere . Today's ' challenges ' border on the impossible) This sphere of hydrogen is known as ***Sharpless 2-264*** or ***Marsalkova 59*** . The ' brightest ' parts of this nebula lies just to the north and to the east of ***Lambda .*** The entire complex spans almost 8 *degrees* across . It has been suggested that a pair of 11 X 80 binoculars or a ' richest field ' telescope outfitted with nebulae filters offer the best chance of detecting this nebulosity . Remember that the odds of seeing this thing are remote but the idea is to enjoy yourself while making the attempt ! Stay warm and happy hunting !

FROM THE OBSERVER'S NOTEBOOK

By Art Russell

Beginner's Interest Group.

I first introduced the Beginner's Interest Group in this column last August. Since that time, I have included features specifically targeting the club's beginning astronomers. I have also scheduled viewing sessions specifically for our beginning astronomers. These sessions have admittedly been essentially ad-hoc, focusing on attendee's expressed interests of the evening. This approach has worked, but has been spotty in its coverage of the basics of astronomy. It is now time to move past that approach and provide a more structured approach for the club's beginners. Over the next few months I will be writing a rough draft of a syllabus which will be available to the club's beginners, and general membership as well. The intent of the syllabus is to provide a concise orientation for the beginner in a few (well, maybe more than a few) short pages. The syllabus should smooth over some of the rougher spots of astronomy for the beginner. Do you have any suggestions for topics? Give me a call, use email (76632.1252@Compuserve.com or gs01har@panther.gsu.edu), or send a post card to the club's address or my home address at: 3450 Jones Mill Road, Apt 905, Norcross, GA, 30092.

One of the best ways to learn astronomy is to observe with a more experienced partner. Not only do

you learn more and fill in the gaps in your knowledge, but observing with a partner is a social event as well. Most beginners aren't aware, but many of the club's more experienced observers get together on an ad-hoc basis for observing at various sites, Villa Rica included, other than those scheduled in the Focal Point. In fact, I do most of my real observing at those sessions! Make the effort to get to know the club's more experienced observers. Schedule your next observing session with the club's members you meet at the club's official and unofficial meetings. Don't hesitate to give me a call if I can be of assistance. I probably don't know the answer, but I know one of the club members that does. Clear Skies!

Observatory Report.

Last month was not a good one at the club's observatory. Unfortunately, we've experienced the club's first vandalism at the observatory. I suppose it was inevitable and to be expected. However, I did not think it would have apparently been committed by a club member. Sometime before 21 December someone broke open the eyepiece box at the observatory. Nothing was taken and all other locks and latches were unaffected. This leads to my belief and dismay that it was done by a club member who had apparently forgotten the combination to the eyepiece box. Whoever did this knew the new combinations to the gate and observatory building. The eyepiece box combinations were never changed. Additionally, this individual did not take the responsibility to properly close up the 20 inch telescope. Of course, anyone who willingly destroys club property can't be expected to act responsibly. Member Larry Higgins has subsequently repaired the box by moving the latch and lock assembly, so the eyepieces are now secure. However, a fundamental question remains: How to adequately secure the observatory and yet provide responsible club members with access to its facilities? Should I replace the combinations and require that all members contact me for use of the telescope? Should I keep the eyepieces in the club's library and require members to check them out for subsequent use? Should I recertify all members in use of the 20 inch telescope? Should we continue the current practices? I welcome any recommendations as we wrestle with this question. What do you think we should do?

Observing Sessions.

E-Mail Notification. As many members with e-mail have noticed, from time to time I send out e-mail to remind members of upcoming events or simply to wish everybody a **HAPPY NEW YEAR**. Starting with the January club meeting, I'll also use email to let e-mail subscribers know who's observing where on any particular evening. Are you heading out to your favorite dark site and looking for a partner or two? Send me an e-mail message or give me a call and I'll relay it to the club's members that have e-mail.

Herschel Certificate. Several club members have wondered about using telescopes equipped with setting circles, digital or otherwise, to observe all 400 Herschel Objects. I recently received the answer from "The Herschel Club" Coordinator, Brenda Branchett: "In answer to your question on setting circles. Yes, you may use them; however we must stress that, depending on the observer, etc. star-hopping would be preferred. Our aim with this club, was to make the amateur aware there was more out there than just Messier objects, there is a lot to observe and take in. What you or anyone else gets out of this club project
is up to that person, setting circles will hamper the learning process of knowing the night sky on a more personal level, but if that person wishes to use circles, etc. that is their choice and what they learn and get out of the program is a personal decision."

Calendar Notes

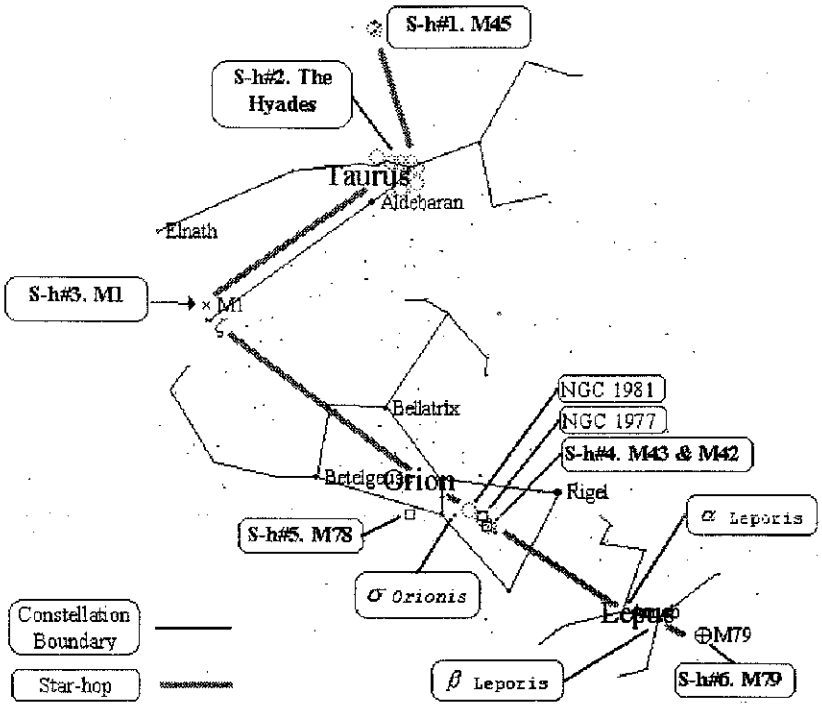
27 January	General observing at Villa Rica. Beginners and old timers, come on out and enjoy the warming hut!
17 February	General observing at Villa Rica. Beginners and old timers, come on out and enjoy the warming hut!

Beginner's Star Hop; January, 1996

by Art Russell

I really enjoy observing at this time of the year. The nights are finally relatively dry. The temperatures are comfortable (well, maybe a little too comfortable even for my tastes = COLD). But most of all, the winter observation offers some of the best some of the best there is to see. This month we'll start off in the constellation Taurus to visit **M45,** the **Pleiades**, the **Hyades** star cluster, and of course, **M1**, the **Crab Nebula**. From there we move to the constellation Orion and the **Great Orion Nebula** which includes **M43** and **M42**. Orion also contains another bright nebula worth noting, **M78**. Finally, to the south of Orion we'll find the constellation Lepus and the globular cluster **M79**.

Star-hop #1. Here we go! Half-way up from the south-eastern horizon and almost overhead as darkness falls you'll find a small, bright open cluster of stars which many observe as resembling a smaller, more compact big dipper. You may be able to find this cluster even under Atlanta's light polluted stars. This is **M45,** the **Pleiades**. Also know as the **Seven Sisters** to western and middle eastern astronomers, it was known to the Japanese as **Subaru** (be sure to check out the logo-badge on the next Subaru automobile you see and you'll recognize its pattern). In November 1993, while working on my Messier certificate, I recorded that **M45** was "easily detected with the naked eye, and very beautiful. No real hint of nebulosity around the cluster members." As Alex Langoussis reported in the December, 1995, Focal Point, there is nebulosity around the **Pleiades**. The bottom-line in this case is that its a case of sky-quality. You need great skies to see the nebulosity around the **Pleiades**. However, probably the best way to see **M45** is with a set of binoculars! A telescope may have too much power and look straight through the cluster! Grab a lawn chair and your binoculars, sit back and relax!



Star-hop #2. Our second star hop for the month is to the **Hyades** star cluster. The **Hyades** star cluster is located a little more than 13 1/2 degrees south-east of **M45** and is easily seen as a distinct V-shaped group of stars visible to the naked eye. Although less prominent than **M45**, the **Hyades** cluster is an attractive cluster in smaller telescopes and binoculars. The **Hyades** cluster is one of the closest clusters to us at only about 130 light years away. Moreover, it is also a part of the larger **Taurus Moving Cluster** which is comprised of most of the stars in the constellation Taurus and is moving towards the star *Betelgeuse, Alpha (α)Orionis* in the constellation Orion. As you look at the **Hyades** cluster you'll notice a distinct bright yellow star on the left or north-east point of the cluster. This is the star *Aldebaran, Alpha (α)Tauri*, and can be remembered as the name of Princess Lehia's home world in the movie "Star Wars."

Star-hop #3. Starting in the heart of the **Hyades** cluster and moving to the north-east past *Aldebaran*, we come to the star *Zeta (ζ), Tauri*. **M1**, the **Crab Nebula** (also known as **NGC 1952**), is located a little more than a degree to the north-west of *Zeta Tauri*. **M1** is the brightest known supernova remnant in the sky and bears looking at time and time

again. At a distance of about 6300 light years it must have been quite a sight when the light of its exploding star was first seen on 4-5 July, 1054 A.D. This nebula is visible in smaller scopes and I've looked at it many times. In October, 1993, I recorded that at 34X the **Crab Nebula** was very visible and very easy to find with an "S" shape. At 106X I noted that its edges were sharply defined and that the nebula appeared gray in color.

Star-hop #4. Our next star-hop takes us out of the constellation Taurus and into the heart of the constellation Orion and to the **Great Orion Nebula** which includes **M43, NGC 1982**, and **M42, NGC 1976**. Starting at **M1**, we head due south in a straight line to the first bright star we see, *Lambda (λ) Orionis*, which marks the head of the mythological figure, Orion, the hunter. *Lambda Orionis* is worth a look in its own right since it is a double star and a great target for small telescopes. What colors do the stars look to you? However, we don't want to stop here. Rather, we want to continue past *Lambda Orionis* and at a distance just short of that which we traveled from **M1** to *Lambda Orionis*, we'll find the "Belt of Orion" consisting of three stars, *Zeta (ζ), Epsilon (ε)*, and *Delta (δ) Orionis*. *Zeta Orionis* is an interesting star because just south of it is the "**Horsehead Nebula**." The **Horsehead** is really beyond the scope of this series of star-hops, but once you've seen it, you'll always be able to get back to it. Continuing with the line we started at **M1**, through *Lambda Orionis* and through the center of Orion's Belt, we come to what many have taken to be "the sword of Orion;" apparently three "smoky" stars. Guess again; you've arrived at the **Great Orion Nebula** which includes not only **M43** and **M42**, but other star clusters and nebula as well. First in line from the belt is the star cluster **NGC 1981**, then prominent as a smoky star to the naked eye is **NGC 1977**, a bright nebula with embedded stars. Next, and most importantly, is **Great Orion Nebula** itself which consists predominantly of the larger nebula **M42** and **M43**, the detached nebula just to the north which some have compared to the shape of a coma. Within **M42**, you'll find the famous multiple star, *Theta(θ)-1 Orionis*, the *"Trapezium."* If Orion is up, you can bet that I'll be looking at it. In September, 1993, I noted that at 175X, **M42** was an amazing view with detailed nebulosity stretching away from the central stars [*Trapezium*]. Check out the great article by Alister Ling in the December, 1995, issue of Astronomy Magazine for more details on the **Great Orion Nebula**. Then go look for yourself. This is one object of which you will never get tired.

Star-hop #5. Lets return the Belt of Orion and to its bottom most star (at least until before midnight!), *Zeta Orionis*. About 1 degree south-west of *Zeta Orionis* is the star *Sigma* . Starting at *Sigma Orionis*, extend a line back through *Zeta Orionis* for a distance about 4 times that between *Zeta* and *Sigma Orionis*. At this point you'll find another bright nebula, **M78**, **NGC 2068**. **M78** won't show much detail in smaller scopes. However, in October, 1993, I used the club's 20 inch and 10 inch telescopes to record: "34X. Easy to see against sky glow. UHC Filter does not help view. Key to picking out object is two stars embedded in the nebulosity; almost like headlights. 106X. Still very visible. Additional apparent contrast helps to set nebulosity apart from the night sky. Object appears flattened on one side and assume a bit of a comet like aspect. 159X. Third star seen easily. Fat "J" or "C" shape apparent in nebulae. UHC filter darkened entire field and nebulae as well."

Star-hop #6. Our final star-hop takes us to the constellation Lepus and the globular cluster **M79, NGC 1904**. To start, lets return again to the Belt of Orion. This time we begin with the middle star, *Epsilon Orionis*. From *Epsilon Orionis* extend a line south through the center of the **Great Orion Nebula** for a distance equal to about 4 times that from *Epsilon Orionis* to the **Great Orion Nebula**. At that point you'll find the 2.6 magnitude *star Alpha (α) Leporis, Arneb*. From *Alpha Leporis*, extend a line south past the star *Beta (β) Leporis, Nihal*, for a distance equal to that between *Alpha* and *Beta Leporis*. At this point you'll find **M79**. At magnitude 8.4, **M79** is not one of the brighter globular clusters, but I have been able to find it from the rooftop of the Fernbank Science center using a set of binoculars. I used the club's 10 inch Newtonian at Villa Rica in October, 1993 to record: "173x. Object stands out distinctly from background. Has flattened oval shape. Has area of concentration of stars in center of the cluster. Area of concentrated stars seems to be similarly flattened oval structure, but oriented almost perpendicularly to the main cluster. Center third of the cluster is area of concentration. Some stars are resolved. Center seems to be unresolved. Possible lane through northwest corner of object."

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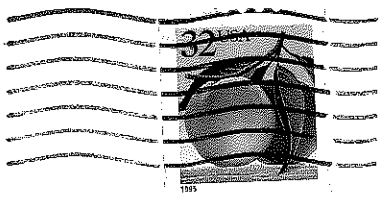
Ginny Mauldin-Kinney	Information Line	770-414-9383	gs05vlm@panther.gsu.edu

THE FOCAL POINT

Newsletter of The Atlanta Astronomy Club, Inc.



FROM:
Richard and Jennifer Jakiel
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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 $20 ($10 for students). Discounted subscriptions to Astronomy ($20), and Sky & Telescope ($24) 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: **707-621-2661.**

Check out our ASTRO discussion list on the Internet: ASTRO@Mindspring.com. Also visit our Internet home-page: **http://www.mindspring.com/~aleko/atlastro.html**

Membership expires (year & month) 9710
Alex & Nelda Langoussis
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