THE FOCAL POINT

The Atlanta Astronomy Club, Inc.

Vol. IX No. 5 **October, 1996**

1947-1997 Celebrating Fifty Years of Astronomy in Atlanta

The October Meeting

The next meeting of the Atlanta Astronomy Club will take place at 8:00 P.M., Friday, October 18. The meeting will be held at Emory University's White Hall. Our speaker will be Ben Zellner, who will be speaking on the asteroid Vesta. Refreshments and fellowship follow the meeting.

AAC CONTRARIAN'S DAUSET TRAILS OBSERVING SESSION

DATE: October 11 to 12th
LOCATION: Dauset Trails Nature Center, near Jackson GA.
START TIME: Friday and Saturday Evenings at dusk.
DESCRIPTION: Not impressed by dark skies? Can't make the trip to Chiefland? Join the few remaining club members that don't head southwards for a night under the stars at Dauset Trails. However, like the trip to Chiefland, there is a price to pay. The staff of Dauset Trails has asked for about an hour of our time in the early evening where we can show approximately 20 children the night skies through our telescopes. Those club members who participated in this program last year will remember that the children were well supervised and that everybody had a grand time. So come on out with your telescope! Better yet, plan on observing both evenings! And remember, the more members participating, the better! Call either Larry Higgins, Observing Chairman or Art Russell, 404.373.4119 or email 76632.1252@compuserve.com, for additional information.

Volunteers Needed At Murdock Elementary School!

DATE: 10/17/96
LOCATION: Murdock Elementary School in East Cobb.
TIME: 7pm
DESCRIPTION: A teacher at Murdock Elementry school has asked for assistance with a Elementary School observing session at the School on October 17th. The estimated crowd will be 75 to 150 people. The club is looking for volunteers to bring out a scope and help answer questions. If you are interested and would like more details, contact: Doug Chesser (770)457-5743 (chesser@mindspring.com). We need at least 5 or more people from the club to volunteer.

BEAVER BROOK ELEMENTARY FUN FRIDAY CALL FOR VOLUNTEERS AND TELESCOPES!!!

Date: October 25th
START TIME: 7pm.
DESCRIPTION: Join members of the Atlanta Astronomy Club in a "Full Moon" observing session for the public at Beaver Brook Elementary in Griffin, GA, as they conduct their "Fun Friday" festivites. Jupiter and Saturn are scheduled to put on an appearance for 200-300 participants, so we need as many telescopes as possible to support this event. Will we be able to see Hale-Bopp? Call Larry Higgins at 770-227-2233 for directions and additional information.

NOVEMBER 2nd, 1996: BEGINNER/PUBLIC OBSERVING SESSION

LOCATION: Villa Rica, Barber Observatory
START TIME: Dusk.
DESCRIPTION: Join the Atlanta Astronomy Club to get hands on instruction in beginning astronomy and observe the Messier and other interesting deep sky objects.

NOVEMBER 8 - 10: First Annual AAC Die Hard Observer's Party

Held at Dauset Trails, this will be a great opportunity to observe under dark skies only an hour from downtown Atlanta. A "no frills" star party (no scheduled events or speakers) that does not take the place of the Peach State Star Gaze held. There will be camping in the back field and restroom facilities will be available. Fees are only $5.00 per person per night. So plan to observe under the crisp, cool skies of Autumn!

AAC SEPTEMBER MEETING

by Jack Warner

The September meeting of the Atlanta Astronomy Club was held on September 20, 1996 at Emory University's White Hall at 8:00 PM with 55 members present. AAC president, Doug Chesser, requested the various committee chairmen to report on the club's recent activities, scheduled events, projects and financial status.

Art Russell, Publicity Chairman, discussed the following events:

- October 4 - "Sidewalk Observing" for children from Egleston Hospital at a site east of Atlanta. Contact Larry Higgins, 770-227-2233, if you are interested in helping with this activity.
- October 5 - Regular Observing session at Villa Rica.
- October 10-13 - Chiefland Star Party, Chiefland, FL.
- October 11 & 12 - Observing session at Dauset Trails. There will be children there for about one hour. The children will have adult supervision.
- October 18 - Regular Monthly Meeting.
- November 8-10 - First Annual AAC Die Hard Observers Party to be held at Dauset Trails.
- Star Ware II - Anyone interested in participating in the Star Ware II Survey, to up-date the current Star Ware edition, should contact Art Russell.
- Messier Objects - A list of the Messier objects and the best time to observe them is available from Art Russell.
- Phil Bracken, Treasurer, reported on the club's financial status and asked for the membership's support of the Speakers Fund and the Refreshment Fund.
- Ken Poshedly, Peach State Star Gaze Chairman, announced that the "Deep South Regional Star Gaze" will be held in Mississippi on the same week end as the Chiefland Star Party. There will be camping on the field, bunkhouse lodging, hot showers and, if you want, food will be available on site with several different meal plans. Contact Ken Poshedly for additional information.
- Video tapes of the 1996 Peach State Star Gaze are available at $12.00 each from Ken Poshedly. The profits from the video sales will go to the AAC treasury.
- Tom Buchanan, Light Pollution Chairman, reported that he has been in contact with the New Jersey Light Pollution Committee and has obtained their report for use in re-writing a light pollution bill for Georgia. Tom indicated that he has also been in contact with Georgia legislators concerning this project.
- Doug Chesser reported that Stephen Blalock will assume the responsibility for the club's web page.
- Other subjects covered by Doug included a brief overview of the progress on the club's new book, the need for assistance in finishing the club's loaner telescope and the need for volunteers to serve on the Refreshment Committee.
- The Board of Directors Meeting has been changed to Saturday, November 16.
- Eric Shelton requested assistance with a lunar eclipse observing session, which will include 130 children, at a Alpharetta location.

After the business meeting, Leonard Abbey introduced Dr. Chris DePree, of Agnes Scott College. Dr. DePree gave a presentation on the Very Large Array radio telescope and his recent work at the VLA.

The Observer's Notebook

by Larry Higgins

The AAC's annual picnic was a great success. There were about 50 to 60 club members and their families in attendance. Most of the members brought their telescopes and binoculars with them. The sky was crisp and clear and "a whole lot of observing was going on".

There was an Award Ceremony presenting Phil Sacco with a pair of sunglasses to protect his eyes and keep them dark adapted from everyone's backup lights. Phil is a true late night "zombie" and is usually the last person to leave an observing event.

There was plenty of good picnic food to eat. Red and black hotdogs, covered dishes, and desserts on hand. Special thanks to Jack Warner for bringing a grill and running back and forth to the store. Kmper Smith did a great job cleaning the grounds up after the picnic. Also thanks to Doug, Phil Bracken and Alex for taking the muggy sky out west with them!

Sidewalk Astronomy

by Larry Higgins

On September 14th, our club held an observing session for Egalston Hospital's Camp Second Chance at Camp Twinlakes located about 50 miles or so east of Atlanta. The skies were so clear and dark we calculated about "8th magnitude" skies (*..ahem, methinks their coffee was too strong! - editor).* But seriously, the skies were among the darkest we've seen in Georgia. We treated the children to many showpiece objects such as M31, M32, the Sagittarius "goodies", Saturn, Jupiter and Hale-Bopp. We also observed M27 the "thumb print" nebula (ask Art Russell).

In return Egalston gave us longsleeve t-shirts and caps with the Camp Second Chance logo on them. You miss alot of fun and enjoyment when you don't attend these observing sessions, and they are open to all club memebers. I would like to thank Kemper Smith, Phil Sacco, Bill Warren and Jack Warner for comming out and bringing their scopes.

"It's Not My Fault!"

by Elaine Wilson

I was so relieved after ready Larry's article in September's *Focal Point* entitled "The Curse of the Observing Chairman". That's where every observing session he schedules the clouds move in. But, I always thought it was my fault. Since my family and I have joined the AAC, every major event that we have tried to observe has been accompanied by cloudy weather. For example, the Perseid meteor shower, cloudy; the night at Dauset Trails, overcast; when the club was at Emory and I was at Fernbank's observatory, cloudy; the September lunar

eclipse, the Moon was eclipsed by clouds (Art, our last Observing Chairman, was also present).

Before we joined the club, everybody at Fernbank (except David Dundee, who intentionally does cloud dances) was our good luck charm so clear skies always prevailed! But now no matter where I go bad weather follows! Even in my dreams. I dreamt that I went to the star party and fell asleep, and was awakened by Art yelling: "Wake up! Wake up! You're missing some great clouds!"

Now I read, it's not my fault. It's the Observing Chairman's Curse. I just have two questions. Number one - is Larry's and Art's curse contagious? And, #2 - will I ever see another celestial object again?

(PS - I *hope* no one takes this article as if I'm qualified to become the Observing Chairman!)

JOURNEY TO THE LAND OF ENCHANTMENT

by Jerry Armstrong

On Friday the 13th, Phil Bracken, Doug Chesser, Alex Langousis and I boarded a plane at Hartsfield Airport. We landed at El Paso, Texas about two and a half hours later, rented a car and drove to Las Cruces, New Mexico. Here we met up with Howard Brewington, a comet discoverer who now has five comets to his credit.

Howard led the way to a delightful pink adobe house surrounded by spreading cottonwood trees. After some last minute instructions we knocked on the door and were led, winding through the house to a den where sat Clyde W. Tombaugh, the discoverer of the planet Pluto! After the introductions, we presented Mr. Tombaugh with a painting of the planet. I explained that this painting depicted the latest findings from Hubble images and Earth based instruments. The data was painstakingly gathered from numerous conversations with scientists of the Pluto Satellite Project at the Jet Propulsion Lab. We also explained that JPL will use a copy of the painting on a brochure about the project. I felt honored when Mr. Tombaugh asked me to sign the painting. Quickly I pointed out that I had already done so in the bottom corner as is customary for artists to do. He insisted that I signed it again only this time in ink and on the back which I promptly did.

With the formal introductions and the painting out of the way, he told us of the discovery. A very interesting account as he spoke of the astronomers of those yesteryear days at Lowell Observatory as if they had occurred the day before. He signed a poster of himself and the discovery photos for the each of us. He also presented to us a sheet depicting the discovery circumstances concerning Pluto that he dated and signed. This paper will be auctioned at the next meeting of the Atlanta Astronomy Club, with the proceedings going to the speaker's fund. Photographs were taken, we graciously thanked Mrs. Tombaugh and said good by to Mr. Tombaugh. He asked if we had seen his telescopes, when we said we had not, he insisted that we step out into the backyard and have a look. The sixteen inch reflector is an awesome structure surrounded by a scaffolding that is reminiscent of the Herschels telescopes of long ago. Although we could not venture forth onto the structure due to deterioration, it still is an inspiring sight. Uncovered except for the optics, Clyde Tombaugh explained that if you are going to use a telescope it needs to be outside!

After leaving Clyde Tombaugh's home we continued our journey north to the small city of Alamagordo. Here we all enjoyed a hardy south western dish of very authentic Mexican food. We all speculated that the green chili peppers and jalapenos would most likely take a terrible toll on us all some time later. We finished our meal then continued on the forty minutes drive up to Howard and Trudy Brewington's home. Desert scenery slowly gave way to the more alpine look with large spruce and Douglas Fir. Driving up the winding gravel road, Howard explained that when one decides to settle in this region of New Mexico, the first purchase is necessarily a four wheel drive vehicle. Up to two feet of snow is very common in these parts during winter.

One of the first sites we decided upon seeing after reaching Howard's home was of course the observatory. A two story structure with a roll off roof in both directions and each side at a time! This can also help in shielding the observer from the wind. Howard has discovered four comets with this setup. The telescopes include both a sixteen inch and an eight inch reflector. Soon to join this armada of comet scopes will be an automated eight inch schmidt camera. We were unable to do any observing the first night due to hurricane Fausto that came in over the Pacific. Howard nicknamed us the Hurricane Magnets. Without any telescoping to be done, we retired to Howard's home and partook of some "Pearl Pop with Foam on Top" (for those of you who cannot speak Justin Wilson's language, that is Cajun for Beer).

The next day dawned gloomy, with prospects of rain in the air. Howard had to work part of the day so we were on our on until five in the afternoon. We had about an hour and a half to spare before we went into Cloudcroft so we decided to go hunt for fossils. It is unbelievable the amount of fossils that are just lying upon the ground out in the open. All are marine creatures, dating back to the Permian age. We found only a few shells but an enormous quantity of Ammonites, coiled snail shelled creatures that when alive had tentacles like an octopus or squid. They possibly resembled the Nautilus in real life. Most are about the size of a silver dollar but one that Doug and I found was as large as a dinner plate! I only wish we could have brought it back on the plane. It sickened us to have to leave it where we found it. Phil found a perfect specimen about the size of a quarter. New Mexico is certainly a fossil hunter's dream.

As it began to sprinkle rain we headed on to Cloudcroft, a small town with a cross of an alpine -- western atmosphere. After asking some locals about a good place to eat we settled on the Pine Cone Restaurant. A better choice could not have been made. If you are ever in Cloudcroft, of course take time to enjoy a burger at the Pine

Cone. Be careful when you order the fries though. One helping is enough for two people.

Our meal finished it was on up the mountain, the first stop would be Apachie Point Observatory. Now many of us can remember when the Two Hundred inch telescope was the biggie, followed by the One Hundred twenty inch at Lick Observatory and the One Hundred inch at Mt. Wilson. Apachie Pointe has a One Hundred thirty eight inch and a One Hundred inch plus smaller instruments in the sixty and twenty four inch range. The One Hundred thirty eight inch is being used for infra-red studies. The One Hundred inch will go into operation very soon using a ccd array in real time down to magnitude twenty-two and having a three degree field! When this instrument goes into operation in the scanning mode the days of the amateur comet discoveries may be coming to an end. This instrument is in an unusual roll off roof observatory and is on stilts overlooking the valley floor far below. For the uninitiated in heights it can be a very scary sight. For some, experiencing the panorama view can be exhilarating. We were unable to tour the One Hundred thirty eight inch due to the presence of the VIP's at the site. But the square dome is unusual and can only be appreciated from the outside anyway.

We left Apachie Pointe Observatory and went farther up the mountain to a place called Sunspot, New Mexico, home of the National Solar Observatory on top of Sacramento Peak. Here we were presented with even more unusual appearing domes and such for telescopes. The Vacuum Tower Telescope is the center piece and can be seen from the valley below at Alamagordo. An eerie structure, it looks like something from a science fiction movie. Painted white and towering to a point almost pyramidal shaped it is truly something to see. Inside is a very complicated array of instrumentation that studies the very surface of our sun in various wavelengths. The John Evans Solar Facility is home to the Spar Telescope, a huge instrument designed to study the corona of the sun by creating an artificial eclipse. Other lesser telescopes can be found here. Perhaps the most unusual is the Grain Bin Telescope. A small dome made from a grain bin houses the first instrument used on the mountain for testing purposes. There is even one very small dome barely as high as a man's head. For a variety of domes nothing quite beats Sunspot, New Mexico.

From here we journeyed back down the mountain for an hour or so drive to an unusual place. Our destination was the White Sands National Monument. This is another of the must see places to be found in this region. Miles and miles of pure white gypsum sand in ever changing dunes and sparse vegetation are found here. This is a photographer's delight, but remember to bring your sunglasses for the sand appears like snow. We all noticed how this fine grained gypsum had the ability to stick together, much like very wet snow. Boy, you could sure build yourself one big sand castle out here with this stuff. A word of caution though, Alex and Doug remarked that if you did not pay much attention where you were walking it would be very easy to become lost in the dune fields. About the only way you could find your way back is to follow your footprints, but the sand is packed, and when walking on it some footprints are barely detectable. To the north of this and a place we did not venture lay Holloman Air Force base, home of the strange bat-looking stealth fighters. Although we did not see any, I have observed them on a previous trip and they are strange looking indeed. Farther north is a place that visitors must get permission to see and then they have to be taken on a guided tour. This is the famous Trinity Site, the exact spot where the worlds first atomic bomb was exploded. To the south lay White Sands Missile Range, and it is interesting that highway 54 has a sign that during missile tests expect delays up to one hour due to road closing.

Following our tour of White Sands National Monument it was on to the Alamagordo Space and Rocket Museum. Here we came across actual space suits worn by a variety of astronauts from Project Mercury through the Apollo era and onto the Shuttle series. On display also can be found a variety of space hardware including missiles, rockets and satellites. There were even pieces of old rockets built by Dr. Goddard himself. Outside are numerous rockets and missiles poised upward as if ready to fly.

It was now getting on to five in the afternoon and our demanding schedule called for us to meet Howard at the Cattleman's Restaurant. Howard had graciously invited us at the request of the Alamagordo Astronomy Club to have dinner with them. Among the club members were Warren Offutt and Alan Hale. Much talk centered on comet Hale-Bopp as the co-discoverer handed out copies of his latest book. Alan was seen with a big grin on his face as he stuffed hands full of money into the knapsack he had used in transporting his books. He also had much writing to do as he was requested to autograph each copy. Those who had not met Alan before remarked that he appeared as a regular guy, wearing shorts, a short sleeve shirt and two children in tow. Alan was not the stuffy professor type that most expected. We also discussed his upcoming trip to visit us in January of next year. Amidst a clanking of forks and knives and rattling of plates we all settled down to what else but steaks of course. Real western fare and plenty of it.

It began to rain in torrents as the long trip back up the mountain ensued. This time we were going to visit Warren Offutt's private observatory. As I had been there prior to this visit I knew that Doug, Alex, and Phil were in for quite a surprise. Warren's observatory is equipped with a Twenty Four inch Ritchie-Creitien telescope housed in an eighteen foot Ash Dome. This instrument and its auxiliary equipment would be the envy of any amateur astronomer and even some professionals as well. Using a Santa Barbara ST-6 ccd camera, Warren has done what no other amateur has done before. By running an exposure of approximately one hour, he has succeeded in imaging a few of the brighter Trans-Neptunian Objects. They range from magnitudes 21.5 and fainter. While in the control room with three computers, one for telescope control, one for imaging and one for chart display, we saw an image of a very strange

comet. Comet Lagerkvist was discovered just before we left for our trip, and I had heard it was indeed very strange. The comet appeared as a tear drop shaped object with a long tapering tail going completely off the screen. Further, this object is in a near circular orbit inside the asteroid belt and the tail points towards the sun not away from it as comets generally do. Current theory has it that it is the result of a possible collision with a very small body that simply knocked a large quantity of dust loose from the surface of an otherwise ordinary asteroid. Images such as Warren's and others may provide clues as to the true nature of this most unusual object. As we retired into Warren's home the rain was still pouring down so Mrs. Offutt invited us for a cup of hot chocolate that really hit the spot.

Saying our good-byes to the Offutts for being such gracious hosts we returned to the vehicles for the long trek down to the main road leading back to Howard's home. Here we again enjoyed each other's company discussing the events of the day and casually sipping on a cold brew. As midnight approached we were all getting very tired. It did not take much to fall asleep, although I would love to have been able to stay awake as our time was growing ever shorter. I was awakened by someone saying it's two o'clock time to get up. I did not, Alex and Phil did. Outside a very cold and windy but clear night awaited them. It was now in the wee hours of Sunday morning as Alex and Howard observed the newly discovered comet Tabur. This particular comet may reach naked eye visibility sometime during November of this year. Alex remarked that the comet appeared as bright as Hale-Bopp does from Atlanta, with just a hint of a small tail. Howard had told Alex that he had only five minutes to observe then he would have to relinquish the scope for comet hunting. Howard is a very dedicated comet hunter and nothing gets in his way of comet hunting, including guests! So for the next hour or so Alex and Phil sat quietly watching the veteran comet discoverer go meticulously about his work.

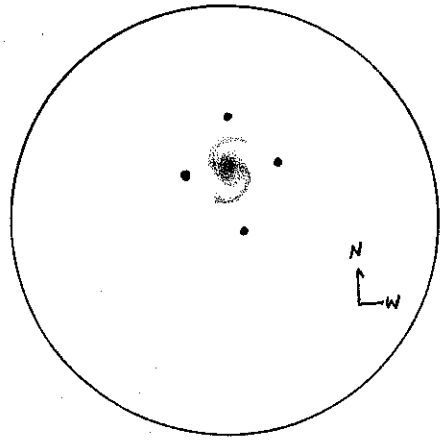
Howard continued scanning the skies long after Phil and Alex returned to bed. His observatory is equipped with a computer that is hooked up to the motion of the telescope. Using this he can simply walk over to the screen and automatically tell if it is a galaxy or nebula that appeared in his telescope. If it is he simply continues on, but four times in the past he stumbled upon a faint fuzzy patch of light that was not on the computer. These turned out to be unknown comets, seen finally by someone on Earth. Each now bears his name, although in two instances of the four he has discovered here he shared the discovery with someone else. His first comet was from South Carolina, known as Arseth-Brewington. Metcalf-Brewington was discovered after being lost for almost a century and then an Italian amateur co-discovered Zanota-Brewington. His other two comets are his alone, one being periodic returning every ten years. The other is now in a hyperbolic orbit and although it is still visible in amateur telescopes it will soon be leaving our solar system forever.

As he was finishing up his observing run a faint patch of fuzzy light came into the field of the eight inch telescope. Howard stepped over to the computer screen and looked at it. He later told me his heart began to race as there was not an object plotted in this sector of the sky. What a grand feeling it would be to have guests staying with you when a new comet is discovered! As a back up the sixteen inch telescope is always trained onto the same field of view. The discovery was not to be, as the sixteen inch resolved the fuzzy patch into a small cluster of stars. Probably not a real cluster but an asterism whose members combined light gave the false impression and hope of a comet. This is the way of the comet hunter, hours and hours of tedious searching. Eventually if diligent enough the search will pay off, but again one has to be persistent.

Sunday morning was a bright and beautiful clear day, and we were scheduled to catch our plane in less than four hours. We packed our belongings, said good by, and started the long journey down the mountain. Through Alamagordo, past White Sands and onto El Paso we drove. On the plane I laid back the seat as we leveled off and smiled as I began to drift off to sleep. New Mexico is truly the Land of Enchantment.

Jerry Armstrong

Sep. 16, 1996



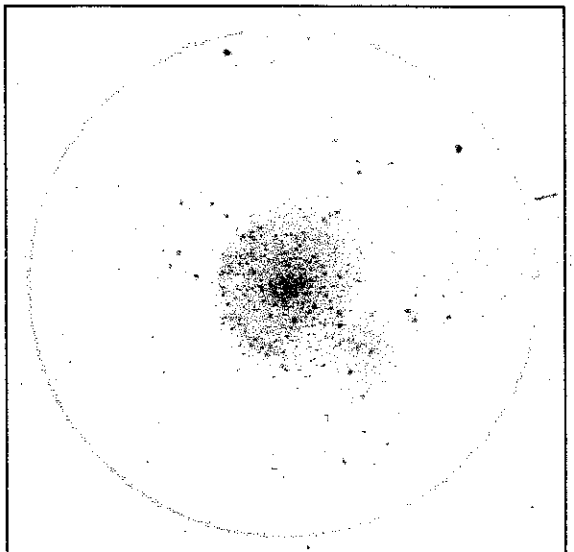
The view of Einstein's Cross at Villa Rica using Art Russell's 3-inch Brandon

Beginner's Star-Hops; October, 1996

By Art Russell

It seems that our long wait through the summer has finally paid off. Our patience has already been rewarded with cooler evenings and some of the clearest nights since last spring. I just hope that next summer the wait isn't as long or as arduous. This month be sure you don't miss catching **Saturn**. It will be at its closest approach to the earth this year and appear largest in the eyepiece as well.

This month's star-hops will be south of the **Zenith** (which is located directly overhead) and therefore easier to observe than those we located last month. We'll start off near the "**Great Square of Pegasus**" and journey to the specatular globular cluster **M15**. From there we'll then journey to the constellation Aquarius. There we'll find the globular cluster **M2**, the open cluster **M73** and its close companion, the globular cluster **M72**. The stars used for pointing the way in these star-hops are not as bright as those you may have become accustomed to previously. However, if you can observe from dark skies with little light pollution to obscure them, even these dimmer pointing stars will be sufficient to locate this month's deep sky quarry. But once again, the key is dark skies! You can't do these star-hops from downtown Atlanta. Pack up your telescope, charts and eyepieces, and escape to the country to chase down this month's deep sky objects.



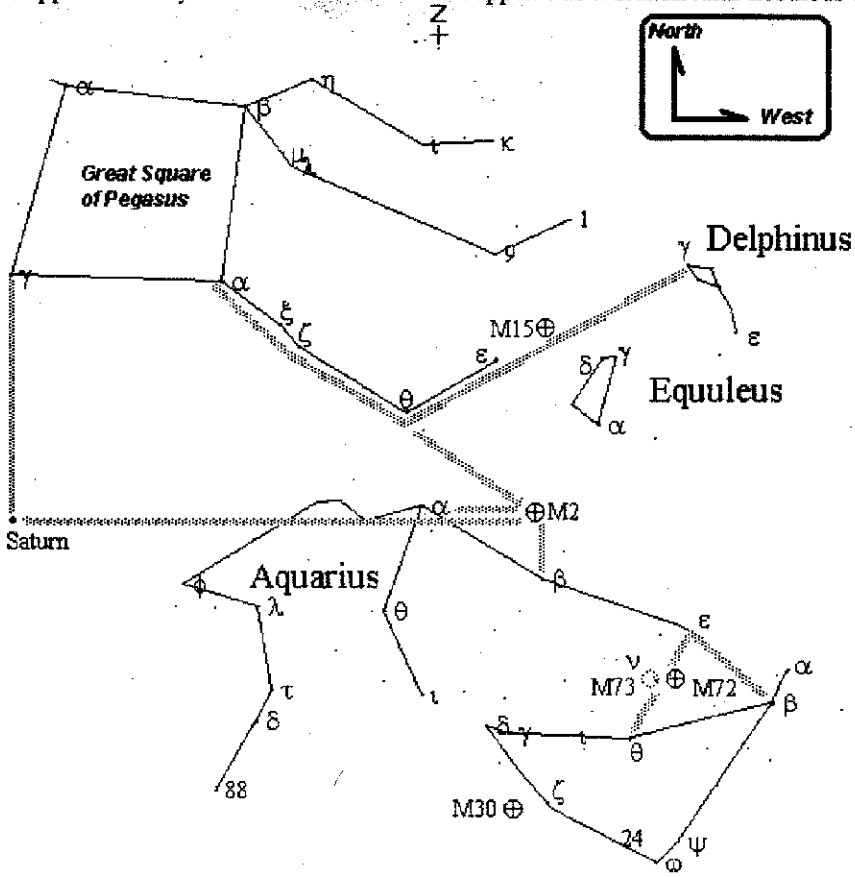
M15 @ 254X

Star-Hop #1; M15, NGC 7078. M15 is a spectacular globular cluster and the closest rival of **M13** in the skies north of the celestial equator. Located in the western most reaches of the constellation Pegasus, **M15** makes an interesting contrast to the other globular clusters still visible at this time of year. Locating **M15** will also orient us for our subsequent star-hops this evening. So where to start? Looking directly overhead on the evening of 15 October at 10PM, you'll find the zenith as portrayed by our map of star-hops. From there, you will find the "**Great Square of Pegasus**" located a little more than 20 degrees, or the distance between the tip of your thumb and little finger when you hold your hand at arms length and outstretched against the sky, to the east-southeast. You may also be able to find the "**Great Square of Pegasus**" from the constellation Cygnus. From Cygnus, the "**Great Square of Pegasus**" is located a little more than 40 degrees or two hand spans, also to the east-southeast. The sometimes easily identified "**Great Square of Pegasus**" is notable by the relative lack of stars within its boundaries. Once we've located the "**Great Square of Pegasus**" we have completed the toughest part of locating **M15**. Locate *Alpha (α) Pegasi* at the southwest corner of the "**Great Square of Pegasus.**" From there, extend an imaginary line about 15 degrees, or the distance spanned by your fist against the sky, past *Xi (ξ) Pegasi* and *Zeta (ζ) Pegasi*, to the star *Theta (θ) Pegasi*. From *Theta (θ) Pegasi*, extend an imaginary line to the northwest past the star *Epsilon (ε) Pegasi*. Past *Epsilon (ε) Pegasi*, extend the line a little less than 4 degrees or slightly less than your forefinger and index finger held together at arms lenght. **M15** will be just slightly north of this line. In binoculars and small telescopes, **M15** appears as a small circular nebulous object without any hint of individual stars. Medium telescopes will resolve many stars and reveal the globular cluster to be nonsymetrical in shape. Larger telescopes will resolve many more stars and also suggest the appearance of lanes within the globular cluster itself. What does your telescope show?

Star-Hop #2; M2, NGC 7089. Just like the star-hop to **M15**, we use *Alpha (α) Pegasi* in the "**Great Square of Pegasus**" as our starting point to star-hop to **M2**. As before, we extend an imaginary line about

15 degrees to the star *Theta (θ) Pegasi*. Extending this line past *Theta (θ) Pegasi* for another 11 degrees, or just a bit more than than the distance spanned by your fist at arm's length will bring you to **M2**. There are also two alternative ways to locate **M2**. The planet ***Saturn*** is about 15 degrees, or the distance spanned by your index and little fingers against the night sky, south of the star *Gamma (γ) Pegasi*, the southeastern star in the "**Great Square of Pegasus**." From there, **M2** is about 40 degress due west, or twice the distance spanned by the between the tip of your thumb and little finger against the night sky. A second alternative is to locate the stars *Alpha (α)* and *Beta (β) Aquarii* in the constellation Aquarius. **M2** forms the apex of a right triangle located to the west of *Alpha (α) Aquarii* and north of *Beta (β) Aquarii*. In binoculars and small telescopes **M2** appears as a small circular nebulous object with a sharply concentrated nucleus, but without resolving any individual stars. Moderate telescopes will resolve many of the outer stars of **M2**, but most of the stars in the center of the cluster remain unresolved.

Star-Hop #3; M73, NGC 6994 and **M72, NGC 6981**. The open cluster **M73** is only a little more than a degree, or the width spanned by your little finger against the sky, away from the globular cluster **M72**. Since they are so close, we can use the same star-hop for **M73** and **M72**. Although **M73** and **M72** lie in the constellation Aquarius, we will need two pointing stars in the constellation Capricornus to help us locate them. Starting in the Aquarius, locate the star *Epsilon (ε) Aquari*. *Epsilon (ε) Aquari* forms the northern apex of an imaginary equilateral triangle formed with our other pointing stars. *Beta (β) Capriocorni*, the southwestern apex of the triangle is located about 10 degrees, the distance spanned by your fist at arm's length, to the southwest from *Epsilon (ε) Aquari*. *Theta (θ) Capricorni* forms the southeastern apex and final corner of our triangle. *Theta (θ) Capricorni* is located a little less than 10 degrees to the southeast of *Epsilon (ε) Aquari* and just a little bit more than 10 degrees east-southeast of *Beta (β) Capriocorni*. We'll find **M72** and **M73** a little bit past the mid point along an imaginary line from *Theta (θ) Capricorni* to *Epsilon (ε) Aquari*. At this piont we'll find **M73** just to the east of our imaginary line and **M72** just to the west of our imaginary line. Both of these deep sky objects are reserved for telescopes or perhaps BIG binoculars, so be sure to observe them from a dark site. In a medium sized telescope M73 appears as only a few dim stars and M72 appears as a dim circular nebulous object.



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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 $20 ($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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