

# The Focal Point

The Atlanta Astronomy Club  
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Editor: Keith Burns

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## January General Membership Meeting

The next meeting of the Atlanta Astronomy Club will be on Friday, January 19, at Emory University's White Hall. Refreshments are at 7:30, with the meeting starting at 8:00.

Our special guest speaker this month is galaxy expert Dr. Ron Buta, from the University of Alabama at Tuscaloosa. The topic of his talk is "Barred Spiral Galaxies". Dr. Buta is respected the world over for his work on galaxies. Here is your opportunity to learn from him first hand!

Dr. Buta studied under Gerard de Vaucouleurs and Myron A. Smith at the University of Texas at Austin, where he earned his Ph.D. in Astronomy. The subject of his research was "The Structure and Dynamics of Ringed Galaxies".

After doing post-doctoral research in Texas and Australia, he has been professor of Astronomy at the University of Alabama since 1989. His areas of study currently include the "Morphology and Dynamics of Galaxies", and the "Studies of Galaxies in the Zone of Avoidance". He was also committee organizing chairman for the IAU's Colloquium No. 157 on "Barred Galaxies". He has authored dozens of articles, and is a contributor to several books as well.

And, like many professionals, there is still a bit of amateur in him as well. Many of you may remember Ron joining us at the Peach State Star Gaze, hunting down galaxies with the rest of us with the Club's 24-inch telescope! Please join us for what should be an extremely interesting and informative talk.

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## Calendar

January 7th- Board Meeting at Bradley Observatory.  
Starts at 2PM. Budget will be discussed.

January 13th-Work Party/SMC at Woodruff.  
Contact John Lentini for time and other info.

January 19th- General Meeting at Emory University. 8PM.  
Speaker Ron Buta on Barred Spiral Galaxies.

January 20th- Deep Sky Observing at CEWMA.  
Location is field by visitor's center off Marben Farms Rd.

January 27th- Open House at Walter Barber Jr Observatory  
Starts at 5PM.

February 16th- General Meeting at Emory University. 8PM.  
Speaker TBA.

February 17th- Training at Walter Barber Jr Observatory

February 17th- FogSPA Sidewalk Event.  
Location TBA.

February 24th- Deep Sky Observing at Woodruff BSC

March 16th-General Membership Meeting at Emory  
Starts 8PM. Speaker TBA.

March 17th-FogSPA Sidewalk Astronomy at Tallulah Gorge

March 24th-Deep Sky Observing at Woodruff BSC

April 20th-Annual AAC Banquet  
Location and Speaker TBA.

## Work Party/SWC at Woodruff

There will be a gathering of about 300 adult scouters at Woodruff on the weekend of January 12, 13 and 14. This gathering, known as the Scouter's Winter Campout (SWC) is a great opportunity to teach scout leaders about astronomy, and get them to pass their interest on to their scouts. We went last year, and although the weather was lousy, everyone had a good time.

This year, we can camp out at the observing field, and do some work on the new campsite as well. There is a nice clearing, ideal for camping, just north of the observing field where we can set up some outdoor amenities, but first we need to clean the place up. Before Kendall can clear it out with his Bush Hog, there are objects made of metal and glass that need to be moved. Also, there are reportedly three baby graves that need to be located and fenced off before the site can be used. We can also blaze the newly cut trail with markers so folks can find their way to the field in the dark.

This weekend is not the best for observing (the full moon is January 9), but it's what we've got. The cleanup of the camp site will go forward rain or shine, as will the SWC. Our participation in SWC events is optional—they will schedule observing for after their Saturday night campfire. The date is January 13, 2001.

We will need people to bring rakes, weed whackers, and other implements in addition to telescopes. Who wants to come? John Lentini, [johnlentini@yahoo.com](mailto:johnlentini@yahoo.com)

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## Focal Point Changes

It's snowing, it's snowing.....as you may have noticed, the calendar is now on page one. This along with other small changes will occur either this month or in the months to come. All of you unsuspecting readers will be wondering what is going on? Well, I have master plan ;however, I can't reveal it at this time...sorry. This disturbing message is brought to you by the management, writing staff, and editor of this publication.

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## Amatuer Telescope Makers Group

Interested in building your own telescope? Want to enhance your current scope with some features or fix problems with it? Do you want to grind your own mirror or learn how it is done? This is the group for you. The ATM group meets every couple of weeks at Skip Cook's house. He has generously offer this location for this purpose. Contact him via phone (404-325-4987) or email ([scz9@cdc.gov](mailto:scz9@cdc.gov)) for more information and directions. Tracy Wilson runs the group and has much expertise to offer. You can contact him via email ([tracywilson@alltel.net](mailto:tracywilson@alltel.net)). Announcements of meetings will be posted on the AAC listserv. You can also find out about upcoming meetings from Skip. There

are other folks that attend these meetings that may have some expertise to offer to help you with construction project you are working on. They are looking for a new place to hold meetings. They need a room that is fairly large and you don't mind it getting dirty. If you know of a place or have one available, please contact either Skip Cook or Tracy Wilson. Thanks.

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## January Observing Events

If it's not snowing, freezing rain, sleet, raining, foggy, or just plain old cloudy, please come on out to one of these events. Dress warm for I'm sure it will be cold this month. January 13 is the work party/observing run up at Woodruff BSC. See Work/SWC at Woodruff article elsewhere on this page for more information.

January 20<sup>th</sup> is the Monthly Deep Sky Observing event to be held at the Observing Field. This field is located inside the Charlie Elliott Wildlife Management Area. Access to the field is via a gravel drive located on the corner of Marben Farms Road and Elliott Trail. Directions are posted at our website ([www.atlantaastronomy.org](http://www.atlantaastronomy.org)). You can also contact Rich Jakiel for more information. Please remember to sign the sign in sheet upon arrive at the field. The sheet is located inside a mailbox on the left side of the road just at the edge of the field.

January 27<sup>th</sup> is the Open House at the Walter Barber Jr. Observatory. The observatory is located just north of the town of Villa Rica. The event starts at 5PM. Bring curious family members, friends, and yourself if you want to see the night skies. Please come on out and help if you can. We need club members to bring their scopes, man the scopes permanently kept there, answer questions, or help with other duties. This is fun even tho it involves some work. You don't have to be an expert in astronomy to helpout. This is a chance for us to show the public who we are. Directions are posted at our website at ([www.atlantaastronomy.org](http://www.atlantaastronomy.org)). You can also contact Rich for more information.

We are in the process of doing renovations at the Walter Barber Observatory. Watch the listserv, website, or announcements at the January Meeting for upcoming work parties to be held out there. If you want to help out, contact Ralph Bowman, Rich Jakiel, or Keith Burns. Phone numbers and email addresses for all three are listed on the last page of this focal point.

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## Astronomical League Membership

As a member of the AAC, you also are a member of the Astronomical League automatically. This entitles you to many benefits. The most popular benefit is the 21 observing programs. Contact Keith Burns at ([keith\\_b@bellsouth.net](mailto:keith_b@bellsouth.net)) for more info. He is you AL representative . You can also find out more at the AL website ([www.astroleague.com](http://www.astroleague.com)).

*Continued on the next page.*

Ken Poshedly finished the Lunar Club and he is certificate number 254 on the Lunar Club. Art Zorka completed the Urban Club is number 18 on the list. There are two other individuals who should be mentioned but I have misplaced my records. I will mention them next month. I guess the information was sucked into a black hole.

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To tie in with this month's program, we've asked Ron Buta to suggest some barred spirals that we could observe. Here are some of his observations...

## VISUAL DETECTION OF GALACTIC BARS AT VARIOUS OBSERVATORIES

**By Dr. Ron Buta**

This list summarizes some of the best barred galaxies I have seen with large reflecting telescopes at observatories in West Texas, Chile, and Australia. Most are accessible from the southern U. S.

**NGC 1300** (McDonald Observatory 30-inch, magnification 300x, 1977) - beautiful barred spiral in Eridanus; spiral arms and bar clearly seen, with faint knots at the ends of the bar.

**NGC 1365** (McDonald Observatory 30-inch, magnification 300x, 1977) - finest barred spiral in the sky; view through clouds stunning! In Fornax Galaxy Cluster. Spiral arms very bright and dust cuts into round nuclear region. Knots near bar ends and in arms.

**M100** (McDonald 107-inch, magnification close to 1000x, April 25, 1979) - Bright nuclear ring in the center of the weak bar seen. Supernova 1979c seen in one of the bright spiral arms.

**NGC 4725** (McDonald 30- and 36-inch telescopes, magnifications 300x and 360x, 1977-1978) - Bright bar and ends of a large inner ring easily seen. This is perhaps the first barred spiral discovered, and one of the brightest in the northern sky where the bar is easy to see. The combination of the bar and the bright parts of an inner ring gives the galaxy the appearance of a ship's anchor.

The bar and ring morphology of NGC 4725 are also sketched in the summary compilation of observations made at Birr Castle Observatory in the mid-19th century. R. J. Mitchell used Lord Rosse's 72-inch speculum reflector to detect these features in 1858. Note well: the bar and brightest parts of the inner ring of NGC 4725 can be seen in a 12.5-inch reflector. The anchor shape is definitely detectable!

**NGC 5371** (McDonald 36-inch telescope, Feb. 25, 1979) - Bar and very faint inner ring seen .

**NGC 1097** (McDonald 36-inch telescope, Nov. 2, 1978) - Bright nuclear ring seen with at least two resolved knots inside a bright bar.

Other interesting barred galaxies I have seen where the bar

can be detected visually: **NGC 1433, NGC 1512, NGC 6300, NGC 6744, NGC 4900, NGC 5921, NGC 7479**, observed with the Siding Spring 40-inch, the Cerro-Tololo 158-inch, and the McDonald 36-inch. For more information on these, see the Webb Society Deep-Sky Observing Handbooks titled "*Galaxies*" and "*The Southern Sky*."

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## Observing Barred Spirals

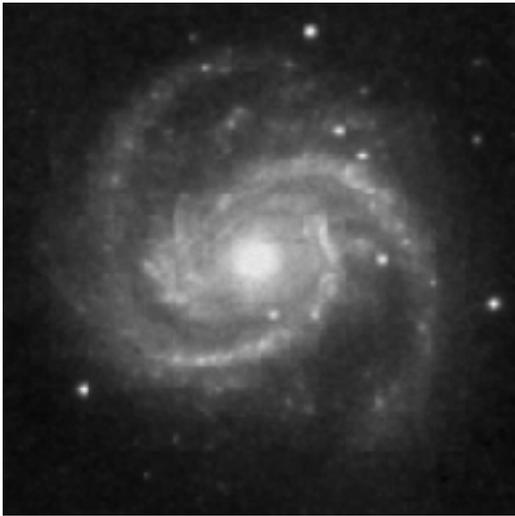
Below is a picture of each galaxy mentioned in the previous article and some info.

**NGC 1300** is located in the constellation of Eridanus. Coordinates are RA 3:19.7 hours/minutes DEC -19:25 degrees/minutes. Magnitude 10.4 and size 6.5 arc minutes. Picture below.



**NGC 1365** is located in the constellation of Fornax. Coordinates are RA 3:33.6 h/m DEC -36:08 d/m. Magnitude 9.5 and size is 9.8 am. Picture to left.

*Continued on next page.*



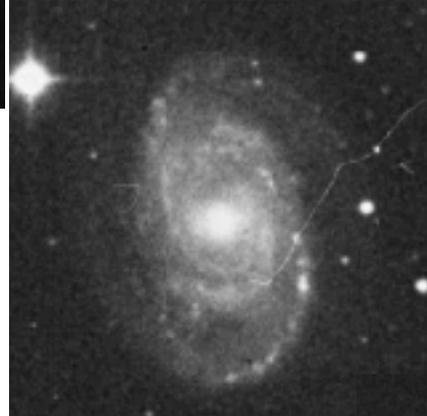
**NGC 4321/M100** is located in the constellation of Coma Berenices. Coordinates are RA 12:22.9 h/m DEC +15:49 d/m. Magnitude 9.4 and size 6.9 am. Picture to the left.

**NGC 4725** is located in the constellation of Coma Berenices. Coordinates are RA 12:50.4 h/m DEC +25:30 d/m. Magnitude 9.2 and size 11 am. Picture to the right.



**NGC 5371** is located in the constellation of Canes Venatici. Coordinates are RA 13:55.7 h/m DEC +40:28 d/m. Magnitude 10.8 and size 4.4 am. Picture to the right.

**NGC 1097** is located in the constellation of Fornax. Coordinates are RA 2:46.3 h/m DEC -30:17 d/m. Magnitude 9.3 and size 9.3 am. Picture is below.



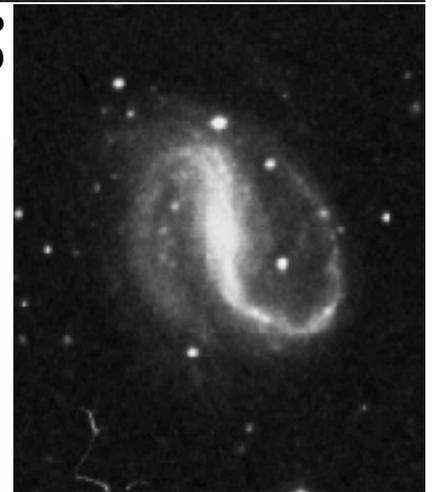
**NGC 1512** is located in the constellation of Horologium. Coordinates are RA 4:03.9 h/m DEC -43:21 d/m. Magnitude 10.6 and size 4.0 am. Picture is below.



**1512** above. **1097** to left. **7479** to right. **6300** below.

**NGC 6300** is located in the constellation of Ara. Coordinates are RA 17:17.0 h/m DEC -62:49 d/m. Magnitude 11 and size 5.4 am. Picture to the right.

**NGC 7479** is located in the constellation of Pegasus. Coordinates are RA 23:04.9 h/m DEC +12:19 d/m. Magnitude 11 and size 4.1 am. Picture in lower right hand corner.



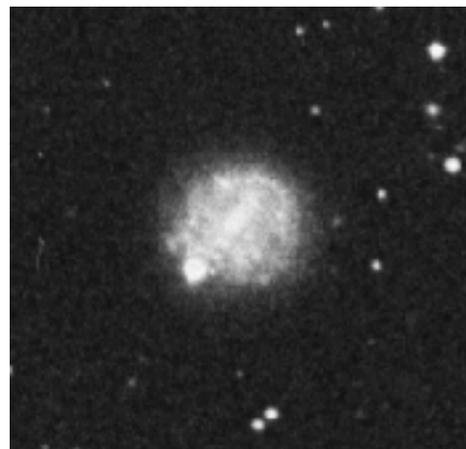
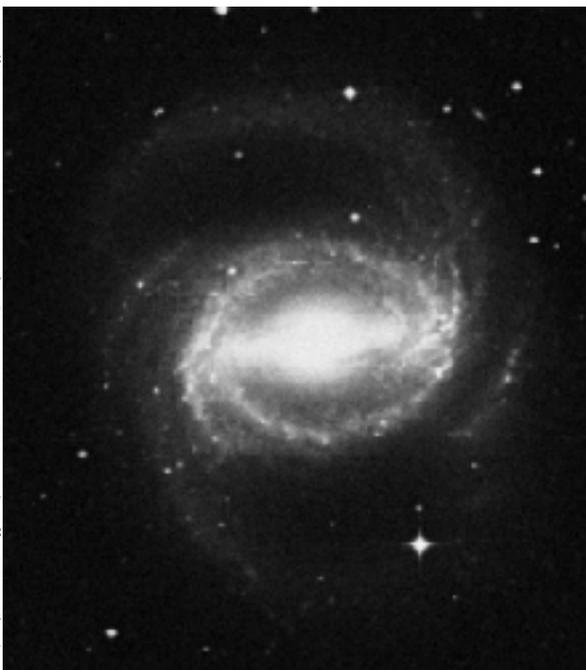
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**NGC 4900** is located in the constellation of Virgo. Coordinates are RA 13:00.6 h/m DEC +02:30 d/m. Magnitude 11.5 and size 2.3 am. Picture to the right.

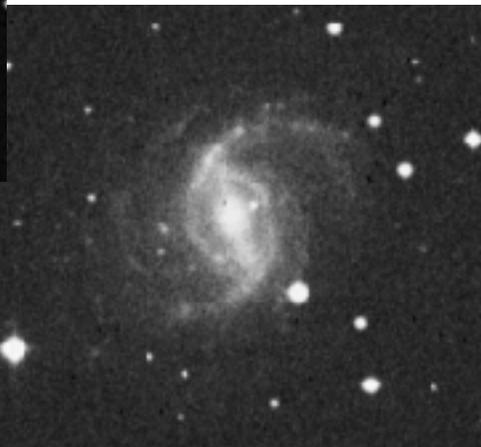
**NGC 5921** is located in the constellation of Serpens. Coordinates are RA 15:21.9 h/m DEC +05:04 d/m. Magnitude 10.8 and size 4.9 am. Picture in upper right hand corner of page.

**NGC 1433** is located in the constellation of Horologium. Coordinates are RA 3:42.0 h/m DEC -47:13 d/m. Magnitude 10.0 and size 6.8 am. Picture to far right of page..

All the pictures used in this article came from the Digital Sky Survey



5921 above. 1433 below.



website. The pictures were resized and cropped to save space. I used Photoshop 4. Other than that the images were not changed. Each raw unprocessed image would occupy a page so I shrunk them down. The files come as gif files in their smallest format. You can access the website at ([http://stdata.stsci.edu/dss/dss\\_form.html](http://stdata.stsci.edu/dss/dss_form.html)). You can also access the website via the SEDS Messier website. This site has a NGC and IC searchable data base. This is how I got all of the images. (<http://www.seds.org~spider/ngc/ngc.html>).

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## Nebulae Hunting Around Perseus

By Richard Jakiel

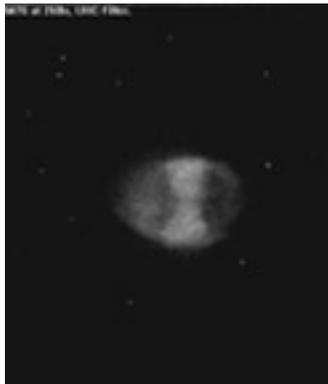
I've always considered the constellation Perseus one of the finest deep-sky treasure troves in the northern sky. Within its borders lie numerous star clusters, nebulae and distant galaxies. Although I am best known as a "galaxy man", I'll take a slight detour and instead discuss the wide variety of nebulae found in this region. Every major type is represented and many of these objects are not listed in the catalogues often used by most amateurs. On this tour I plan to include some famous, lesser known and a few truly obscure objects that have been seen by a small handful of advanced deep-sky observers.

A particularly good object to start off with is **M76**, perhaps the best known nebula in Perseus. Also known as the *Little Dumbbell*, it has a better "dumbbell" shape than M27, which to myself always looked like an apple core. It was discovered in 1780 by Pierre M $\acute{e}$ chain and observed shortly afterwards by Charles Messier. This is a classic "bi-polar" planetary nebula and William Herschel was first to record its distinctive dual shape as two separate catalogue numbers (*NGC 650-1*). Compared to most planetary nebulae, M76 has a fairly high surface brightness and can tolerate medium to high magnifications. Even a small instrument can reveal the general bar-like shape and the two main nebulous knots. To see the delicate outer loops

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requires an UHC or O III filter and at least 10-inches of aperture. Under the less than pristine of the AAC's Barber Observatory, I made several observations using an O III filter and the 20-inch at 176x (13mm Nagler). Immediately apparent was two large, nebulous knots surrounded by a diffuse oval haze. Low contrast structures were visible within the haze, and M76 did bear an uncanny resemblance to M27 as viewed in a smaller scope.



Picture above is M76 at 268X with a UHC Filter.

A bit more challenging planetary nebula is **Abell 4**, or **PK 144 - 15.1**. Located about 45' SE of the core of the splashy open cluster M34, it measures about 22" across and has a visual magnitude of 14.4. At one time, this was considered a difficult object with a large telescope, but with today's nebula filters it can be picked out by a sharp-eyed observer with a 10 or 12.5-inch

scope. Using the AAC's 20-inch I was able to detect a faint, round disk that was mildly annular and brighter in the middle.

*Continued on the next page.*

On the POSS (Palomar Observatory Sky Survey) plates several very small galaxies are visible in the field. I wonder if anyone has tried to observe these distant systems?

Not all nebulae respond well to the use of standard filters. Some shine by the reflecting light from nearby stars. **NGC 1333** is a relatively bright reflection nebula about 2.5 degrees WSW of the star o Persei. In a medium sized telescope, a weakly luminous knot of nebulosity can be seen surrounding and just south of a 10<sup>th</sup> magnitude star. Going back to o Persei, we find the small nebulous star cluster **IC 348**. Much like the much more famous Pleiades (M45) open cluster, its brighter stars are bathed in the weak light of a reflection nebula. Both IC 348 and NGC 1333 are luminous parts of a much larger complex of bright and dark nebulae (including **Barnard 1,3,5** and **202**).

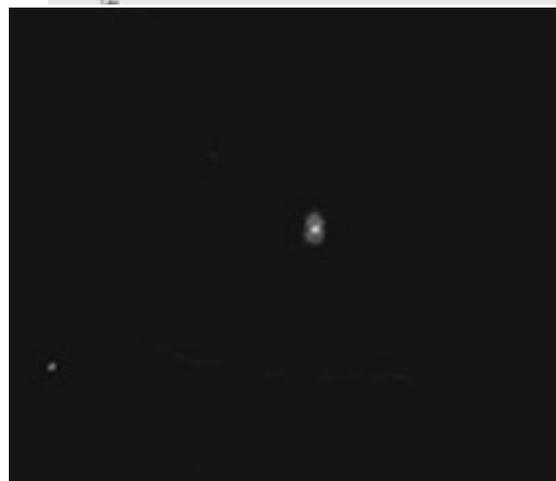
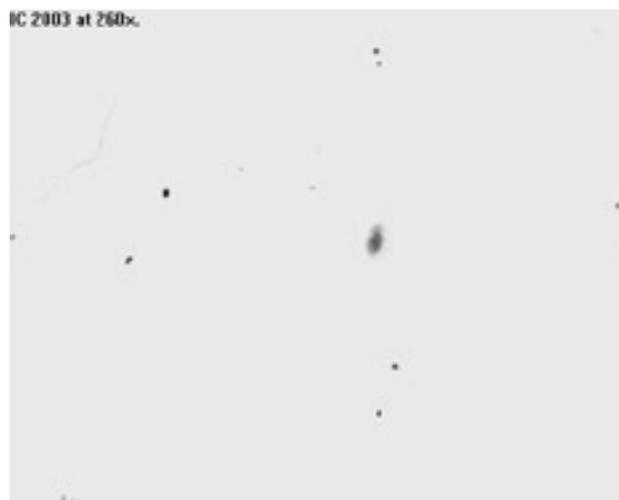
About 5 degrees to the NE lies the most famous emission nebula of the region – **NGC 1499**, better known as the *California Nebula* due to its unusual shape. The bright blue star x Persei lies less than ½ degree to the south, making an easy starting point for star hopping. It was discovered visually by the keen eyed American astronomer E.E. Barnard in 1885 using only a 6-inch refractor. Long considered a “challenge object”, I made my first observations in the late 1970’s with an 8-inch Cave f/7 reflector. Back then, all I could detect was a very faint, broad diffuse glow nearly 2 degrees long and over ½ degree wide.



**Part of California Nebula in picture above.** Image from Digital Sky Survey. Today, narrow bandwidth filters make the task of observation much easier. By far the most useful is the H-b, a filter most commonly associated with detecting the Horsehead Nebula. With this filter, the California is quite easy to observe with a small rich-field telescope, while large instruments can reveal a wealth of subtle details. Due to its sheer size, the California has a few dim background galaxies shining through the nebulosity. The brightest is **IC 2005**; it’s a tiny 15<sup>th</sup> magnitude fuzzball located in the western approaches of the

main nebula. I’ve never encountered any observations of this obscure little galaxy in the literature or on the Internet. If anyone were game to try, I’d like to see some good visual observations.

Located between these large nebulous regions are two small, yet relatively bright planetary nebulae. Perhaps the easier to find is **IC 2003**; a tiny blue-green fuzz spot situated ½ way between the bright stars x and z Persei. At 11.5 mag (v) and measuring a mere 6” across, its disk is slightly oval and of even surface brightness. **IC 351** is located slightly west of the midpoint between 40 and z Persei and its tiny 8 x 6” disk is similar to IC 2003. Like IC 2003, this object has a high surface brightness and will tolerate the use of higher magnifications. Moderate to large sized instruments will reveal a small inner core surrounded by a faint outer halo.



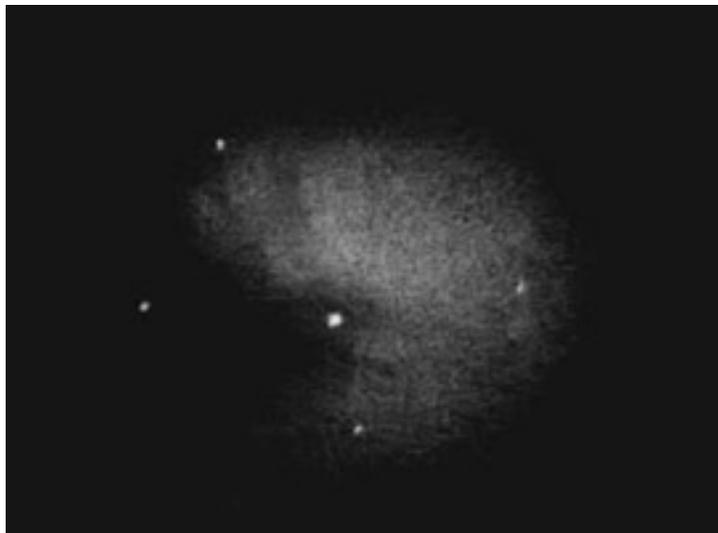
**Above is a sketch of NGC 2003 at 200X.**

**Picture to the left is of IC 351 to the left.**

Somewhat isolated near the Perseus – Auriga border is the bright reflection nebula **NGC 1579**. Nearly due east from the famous California Nebula this is an easier object for visual exploration. The nebula is a fascinating interplay of bright and dark areas and has a small star cluster embedded within. Up in the northeastern corner of Perseus are a couple bright emission nebulae that are readily detectable with small telescopes.

*Continued on the next page.*

The first is **NGC 1491**; a fairly bright object located about 1 ¼ degrees NNW of the bright star I Persei. An 8-inch scope should have no problems picking out an irregular, diffuse glow with a denser core. In the AAC's 20-inch scope at 176x (UHC filter) I could detect wispy filaments and dark rift cutting across the object. Nearly five degrees due east lies a pretty nebulous star cluster. Designated as **NGC 1624**, it has only a dozen stars of 12<sup>th</sup> magnitude and fainter all embedded in a diaphanous sheath.



Picture above is NGC 1491.

### Strange, Obscure Stuff

So far, all the objects discussed can be found in detailed star atlases or more advanced guidebooks. The next couple objects are not listed in the “typical” sourcebooks and are known by only the most dedicated observers. The first is **Sharpless 2-216** (PK 158+00<sup>0</sup>1), the largest and closest known planetary nebula. Originally classified as an emission nebula in 1959, its true nature was not discovered until nearly 30 years later. For Sh2-216, Pier *et al.* (1993) cites a diameter of 1.6 degrees and a distance of only 120+/- 20 parsecs. This nearby giant dwarfs the well-known Helix, and places it on the top of the list of the largest planetary nebulae. Until the late 1990's, there had been no known visual sightings of this elusive giant, prompting British planetary nebula guru Steven J. Hynes to post an observing challenge in the April 1997 *Webb Society Quarterly Journal*. On this side of “the pond”, planetary hawk Jay McNeil tried (unsuccessfully) to observe this object and described the whole process as a form of “retinal eye torture”!

Undaunted by these grim prospects, Dave Riddle and myself made the attempt in February 1999 at Dave's observing cottage located in Panacea, Florida. Luckily we had done our homework and came armed with detailed MegaStar and O III line emission charts, plus an impressive array of filters and wide-field eyepieces. Using Dave's 18-inch scope (35mm Panoptic + O III filter) under + 7.0 magnitude (visual) skies, we both observed a huge diffuse arc of nebulosity perhaps +40' across and up to 10- 12' wide. It was easier than expected, and should

be “doable” under similarly dark, transparent skies with scopes 16 to 18-inches or larger.

Sometimes objects aren't always correctly classified nor have the proper coordinates. A beautiful example is a group of three little nebulae located just across the Auriga – Perseus border. Uncovered by the local “nebula sleuth” Dave Riddle, these objects were originally classified as galaxies in the Morphological Galaxy Catalogue (also known as the MGC). They can be found on the northern boundary of the weak open cluster **Dolidze 16**. I have unofficially nicknamed these quirky nebulae as the “*The Three Stooges*”, as they represent a couple major ‘screw ups’ in the process of astronomical cataloging and positioning. The brightest is “Moe” (MCG +5-13-2?), a small fuzzy spot of 13.5 magnitude and measuring 15” x 20” across. Nearby “Larry” (MCG +5-13-3?) is a fuzball of similar brightness and size as Moe. The most screwed up one is “Curly”, as the MCG “galaxy” (MCG +5 –13-1?) has a completely botched position. It is also the smallest and faintest of the three nebulae. I have spotted all three objects in a 10-inch f/6 scope at 228x, and they quite easy in large aperture scopes.

So there you have it, a brief tour of the famous and the obscure; the bright and the exceedingly faint nebulae in Perseus. On the next clear winter's night, take a detour off the well-worn path and instead go “walk on the wild-side” – you might be surprised. There is a table containing all the objects discussed in this article on the next page of this publication.

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## Directions to Charles Elliot Observing Field

Drive on I-20 east from Atlanta. Exit interstate at exit 98 which is highway 11. Turn right at end of exit ramp and head south. Drive to and thru the town of Mansfield. After crossing the railroad tracks, proceed south on highway 11 for another 3 miles. Turn left onto Marben Farms Road. Note that there should be a sign for Charles Elliot Wildlife Center. Marben Farms Road is paved. Proceed on Marben Farms Road for one mile to first paved road on right. Turn right onto Elliot Trail. After turning onto Elliot turn, turn right onto gravel drive. The drive runs between two steel poles. Take the drive all the way to end. The drive ends at a field. The sign in mailbox is on the left side of the driveway and at the edge of the field.

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## Directions to Walter Barber Observatory

### FROM ATLANTA OR DOUGLASVILLE:

Take I-20 west to exit 24(Carrollton and Villa Rica). Exit interstate and at end of exit ramp turn right onto GA 61/101. Proceed on GA 61. At third traffic light road shrinks down from 4 lanes to 2 lanes. Continue straight through intersection. Road becomes GA 101. After approximately 1 mile, the road ends at a three way intersection. Turn left. Proceed for 1/4 mile. Turn

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right onto Harlan Lane. Travel on Harlan Lane for exactly 2 miles. Turn left onto Tapley Road. Proceed on Tapley Road for 3/4 mile. Observatory is on right side of road. Look for stonewall with a iron wagon wheel gate. The observatory driveway is about 100 feet before that stonewall on the right. Observatory has three buildings. Two of the buildings are white cinder block and the third building is a dome.

**FROM MARIETTA OR DALLAS:**

Take GA 120 west from Marietta to US 278. Turn right onto 278 and proceed on it for 2 to 3 miles to GA 61. Turn left onto GA 61. Head south on GA 61 to Douglas County line. Once you cross into Douglas county the road will go up a hill. At the top of the Hill is a road on the right. Turn right onto Led better Road. Take Led better Road to the end. Turn right onto Harlan Lane. Proceed on Harlan Lane for exactly 1 mile. Turn left onto Tapley Road. Proceed on Tapley Road for 3/4 mile. Observatory is on right side of road. Look for stonewall with a iron wagon wheel gate. The observatory driveway is about 100 feet before that stonewall on the right. Observatory has three buildings. Two of the buildings are white cinder block and the third building is a dome.

**FROM CARROLLTON:**

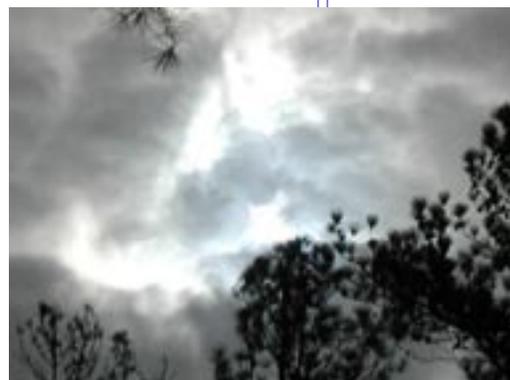
Take GA 61 east and north from Carrollton. Just after you cross over I-20, start counting traffic lights. The road will shrink down from four lanes to two lanes at the third traffic light. Continue straight through intersection. Road becomes GA 101. After 1 mile, the road ends at a three way intersection. Turn left. Proceed for 1/4 mile. Turn right onto Harlan Lane. Travel on Harlan Lane for exactly 2 miles. Turn left onto Tapley Road. Proceed on Tapley Road for 3/4 mile. Observatory is on right side of road. Look for stonewall with a iron wagon wheel gate. The observatory driveway is about 100 feet before that stonewall on the right. Observatory has three buildings. Two of the buildings are white cinder block and the third building is a dome.

**Table 1: Selected Nebulae of Perseus.**

| Object   | RA ° ' "   | Dec. ° ' " | Type    | Magnitude | Size       | Other                         |
|----------|------------|------------|---------|-----------|------------|-------------------------------|
| M76      | 01 42 21.6 | 51 34 05   | PN      | 10.5      | 65"        | <i>Little Dumbbell</i>        |
| Abell 4  | 02 45 25.8 | 42 32 35   | PN      | 14.4      | 22"        |                               |
| NGC 1333 | 03 29 18   | 31 25 00   | RN      |           | 9' x 7'    |                               |
| IC 348   | 03 44 36   | 32 09 00   | RN+BN   |           | 10' x 10'  |                               |
| NGC 1499 | 04 00 16   | 36 30 10   | BN      |           | 40' x 140' | <i>California</i>             |
| IC 2005  | 03 57 39.6 | 36 47 14   | Galaxy  | 15.6      | < 1'       |                               |
| IC 2003  | 03 56 24   | 33 51 42   | PN      | 12.6 (p)  | 7"         |                               |
| IC 351   | 03 47 30.6 | 35 03 12   | PN      | 12.4      | 7"         |                               |
| NGC 1491 | 04 03 24   | 51 19 00   | BN      |           | 9' x 6'    |                               |
| NGC 1579 | 04 30 12   | 35 16 00   | BN      |           | 12' x 8'   |                               |
| NGC 1624 | 04 40 24   | 50 27 00   | BN + OC | 11.8      | ~ 5'       |                               |
| Sh2-216  | 04 45 00   | 46 49 00   | PN      |           | ~ 100"     | <i>Largest and closest PN</i> |
| RN 3     | 05 14 16.2 | 32 45 19   | BN      | 15.0      | 10"        | <i>Curly</i>                  |
| RN 2     | 05 14 22   | 32 48 23   | BN      | 13.5      | 20" x 15"  | <i>Moe</i>                    |
| RN 1     | 05 14 27   | 32 48 01   | BN      | 13.5      | 15"        | <i>Larry</i>                  |

RN = reflection, BN = bright or emission nebula, PN = planetary nebula, OC = open cluster.

In the picture to the right below is my sister enjoying views of the eclipse from sunny Atlanta. The middle picture is of Mitzi Adams and another unnamed person trying to view the eclipse through mostly cloudy skies. This and the last picture taken near Huntsville. Picture to the right is of the eclipse taken by Mitzi.



## Christmas Day Eclipse

By Keith Burns

I took a chance on Christmas day and took some photos of the Solar Eclipse of the sun. As luck would have it, the weather was beautiful and the equipment functioning quiet well. The results below prove that even the simplest of devices can work wonders.

The best way to view the eclipse safely was with a binocular viewing box. Since I didn't have a solar filter, this was the next best option. Basically what I did was take a cardboard box. Cut out a rectangular slot. I then cut off one side of the box. On the side opposite of the slot I glued a sheet of blank plain white paper. I mounted a pair of 8X56 Orion binoculars onto a camera tripod. From there the back of the binoculars was slid into the slot of the viewing box. I used masking tape to secure the box to the binoculars. Since the image of the sun cast on the paper was too bright to view, I took a piece of cardboard and used a paper punch to punch two holes into it. One hole for each glass surface on the front of the binoculars. With a little masking tape, I secured the card to the front of the binoculars. Now the image of the sun was much dimmer and far easier to photograph.

I took a Digital Camera and took pictures of the eclipse image on the paper at staggered times. To mark the time, I used sticky notes and wrote the time and date and location of the picture on a piece of paper. I secured each note to the viewing screen and took a picture. Afterward the old note was remove and a new one installed. Below is the results of the work.

Several of the photographs are on the Spaceweather website of NASA. Check it out at [http://spaceweather.com/eclipses/gallery\\_25dec00.html](http://spaceweather.com/eclipses/gallery_25dec00.html) . I'm near the bottom of the table.

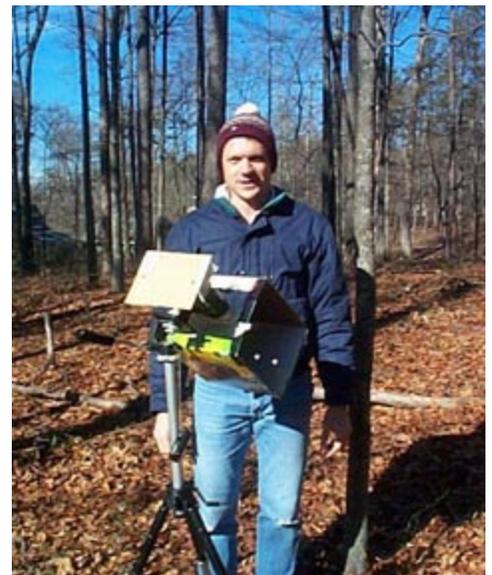


Pictures above eclipse in sequence. Sequence runs from left to right. 1)11:50AM 2)12:15PM 3)12:25PM Eclipse Peak 4)12:48PM 5)1:16PM 6) 1:48PM 7) 1:55PM

Below is a closeup picture of the simple setup. The picture to the right is of the stop down card placed on the front of the binoculars.

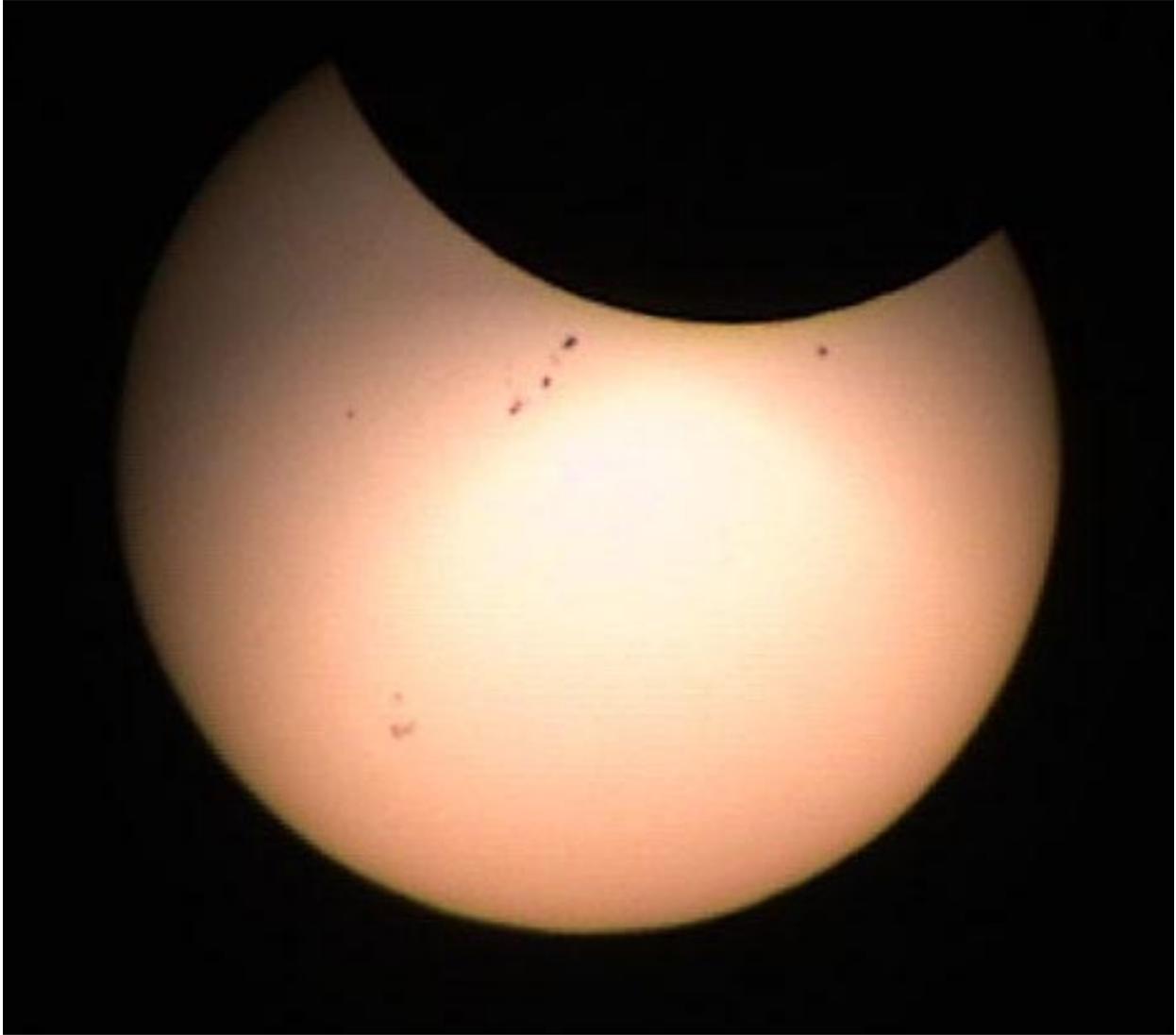


The person below is one happy astronomer. What more can one ask for on Christmas Day then an eclipse? I say nothing. BTW: I used a DC210 Digital Camera to take all these pictures.



## Canadian Christmas Partial Eclipse

The following picture was taken by Chuck Painter on Christmas Day. He and Delaine were up in Canada visiting family during the holidays. They took this picture indoors since it was too cold outside to stay out for very long. He set up his Orion short tube 80 mm refractor on a tripod. Then Chuck took his video camera and took video of the eclipse. They had the telescope positioned in front of the glass sliding door. The below picture is a still frame taken from the video. Even with the extra glass in front of the telescope, you can see the sunspots in the picture.



Well in early December I went out to Seattle for a vacation. The first thing everyone around Atlanta kept telling me was that it is always cloudy and rainy in Seattle. It's not true. The picture to the right was taken the first night I was there. We had clouds most of the day but it cleared up before sunset. The nearly full moon put on quiet a show that night. Near the moon was the planets Jupiter and Saturn. Soon some high cirrus moved in producing a beautiful Halo around the moon. Just inside the halo was the planets Jupiter and Saturn. Jupiter was the closet to the moon with Saturn farther away. The photo to the left is a digital image I took of the moon. I took the picture free handed without a tripod. The halo did not showup in the photo.

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## Telescope For Sale

10 inch SCT Celestron on Altazimuth Mount. This is attached to a heavy duty field tripod. Includes scope case. Scope has a 8X50 spotter scope attached. Telescope was manufactured in Japan. Comes with a 18 mm 1.25 inch Ortho eyepiece. Asking price of \$2000. Will take other bids. Contact William Michell at 770-926-4845 for more detail.

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## Website Report

The website has proven itself in attracting new members and keeping members informed of club events. This can only happen if we are given the information to post on the website. If you have any suggestions, comments or ideas please send them along to the [webmaster@AtlantaAstronomy.org](mailto:webmaster@AtlantaAstronomy.org).

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## Joining the AAC

You can join the AAC by filling out a membership form and mailing it along with you dues to the address printed on it. These forms are available from our Treasurer (Peter Macumber). He carries copies of these forms to most club functions. You can also download the form from the club website at ([www.atlantaastronomy.org](http://www.atlantaastronomy.org)). Once you find the form. Download it and print it. Fill out and mail the form in. Fee structure is \$25 for family and single members. Student fee is \$10. Student fee applies only to students currently enrolled. While the club does have PO Box address, it is best to mail the form to Peter's house. He get's the stuff much faster that way. If you want to get either Sky & Tel Magazine(\$30)or Astronomy Magazine(\$29), include that with you dues made payable to Atlanta Astronomy Club.

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## Magazine and Membership Renewal

You are sent a membership renewal two months before your membership expires. Your **magazine renewals** are sent to you by the **publisher**. **Magazine renewals** must be **paid by the club**. Remember to send renewals to the club with a check payable to the club. S&T is \$30. Astronomy is \$29. Club membership is \$25 or \$10 for a student.

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## Focal Point Deadline

I'm looking for articles, pictures, and drawings on anything astronomy related. All formats are acceptable. Pictures are best emailed as JPEGs. I can also scan in hard copy pictures. Articles can either be sent via postal mail or email. Address it to Keith Burns 3740 Burnt Hickory Road Marietta, Georgia 30064. Email address is [Keith\\_B@bellsouth.net](mailto:Keith_B@bellsouth.net). You can submit articles anytime up and including the deadline date. The **deadline** for the **February issue** is **January 29th, 2001**.

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## Getting The Focal Point Online

Did you know that there are two versions of the focal point available? One is the standard 8 page b&w photo copied that is mailed to members. The other version is available on the web. It is 10 to 15 pages long. Web version is in color with pictures and an extra article (or two).

The Focal Point is available online in PDF format. The free Adobe(R) Reader allows you to view, navigate, and print PDF files across all major computing platforms. Download the free reader at [www.adobe.com](http://www.adobe.com)

Visit **NightSky.Org/aac** on the web. In a private sub-web, the past year of Focal Points can be found. Check it out. If it works for you, send Peter Macumber an e-mail and Keith Burns will stop sending you a snail-mail copy. The Focal-Point web can be entered by using the Username of **AAC** and a password of **Orion**. These names are case sensitive! Type **AAC** in all capitals, type **Orion** exactly as you see it here.

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## AAC Products Available For Sale

### Peter Macumber

Happy New Millenium! The club has had a successful year, although some of our observing programs were a cloud/rain/snow out. Here's hoping 2001 will bring clear skies. The club's web page was recently updated to include the AAC store. There in, is a partial list of some of the offerings of the club. Most items we sell produce a small profit for the club, to help finance our activities.

The club has a number of T-shirts with the club logo and a few of the Lights On - Lights Off T-shirts remaining. We have the clubs very own coffee mugs/pencil holder. If you wish to purchase any of these items, please contact me. I usually have a supply of them with me at club events.

We are now offering caps, which can be seen on the website. These are going to be ordered. If you wish to have a name or caption added, you must pre-order! We are only going to order a small number, so if you want a cap, with the logo for only \$10, please fill in an order form on the web or contact me. If you wish to add your name or caption, you must order the cap. Adding your name or caption will add \$2 to the cost.

We have a few Astronomy 2001 calendars left. If you want one before they are all gone, please let me know. We have a small assortment of books and guides. See me at the next meeting! Although not listed, subscriptions to Sky & Telescope and Astronomy are offered at a discount. This is a direct saving from the publishers.

We are investigating/pricing a new source for the club sweatshirts with a stitched logo as well as other items. If you have any particular ideas for an item please let me know.

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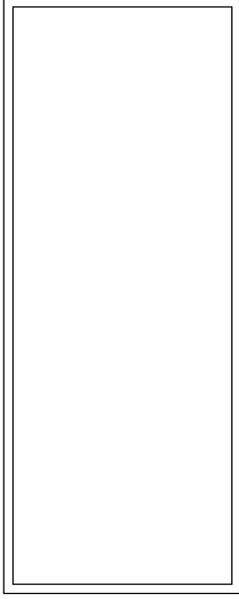
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## *The Focal Point*

Newsletter of The Atlanta Astronomy Club, Inc.

### FIRST CLASS



FROM:

Keith Burns Email: Keith\_b@bellsouth.net

3740 Burnt Hickory Road

Marietta, Georgia 30064

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

Atlanta Astronomy Club

PMB 305

3595 Canton Road A9

Marietta, GA 30066

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. Membership is open to all. Atlanta Astronomy Club Hot Line: Timely information on the night sky and astronomy in the Atlanta area. Call **770-621-2661**. Internet Home Page: <http://www.AtlantaAstronomy.Org>

**Subscribe to the Atlanta Area Astronomers Mailing List:** The name of the new list is: AstroAtlanta. The address for messages is: AstroAtlanta@egroups.com. To add a subscription, send a message to: AstroAtlanta-subscribe@egroups.com. To cancel your membership, send a message to AstroAtlanta-unsubscribe@egroups.com. Messages for the list-owner (me) go to: AstroAtlanta-owner@egroups.com or to (L.Abbey@mindspring.com). The "home page" for the list, from which you can change your account defaults is: <http://www.egroups.com/group/AstroAtlanta>. This list is owned by **Lenny Abbey** who is the **Club Historian**. You can reach him via phone at 404-634-1222.

## AAC Contacts

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