

The Focal Point

The Atlanta Astronomy Club
Established 1947

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Editor: Peter Macumber

How I made a scope from a Copier Lens

By Richard Blackburn

I saw a reference in the ATM mailing list about making a small refractor from a copier lens, and decided to look into making one. I started by going to the Surplus Shed home page (<http://www.surplushack.com/>) to price the lens and found one for \$8. It was a 56.5mm f/4.2 lens with a 240mm focal length. I ordered it and started looking at Home Depot for the parts needed. When the lens came in, I went to Home Depot and tested the 2" coupler and the 3" to 2" reducer both made from black rubber. Both would fit on the lens, so the saga was ready to begin. I purchased both of these, a one foot piece of 2" PVC, and 2" to 1.5" PVC reducer, a 1.5" to 1.25 inch compression joint reducer and a 1.25" sink trap extender (the parts from Home Depot totaled about \$12). After a little testing, I figured out I only needed about 2" of the 2" PVC, so I cut the piece off and started putting the scope together (NOTE: I did not remove the f-stop from the lens). First on were the two black rubber pieces (the 3" to 2" reducer and the 2" coupler), then I glued the 2" to 1.5" reducer to the piece of 2" PVC. I put the 1.5" to 1.25" reducer directly into the 2" to 1.5" reducer. The last thing to do was to insert the 1.25" trap extender in the end (this is my focuser). Now all I need to do is to ruff up the inside of the PVC and paint it flat black, and add a mount so I can use it from my camera tripod.

I have tested it now with both my 26mm (9x) eyepiece and my 9.7mm (24x) eyepiece and had good views of the stars. It is very hard to hand hold it steady with the 9.7 eyepiece. The first object I viewed was M42, The Great Orion Nebula. It had a nice clean view. I also looked at The Haydes and The Pleadies both were very clean and visible.

I will post complete plans and photos on my web page at <http://rblackburn.home.mindspring.com/astro2.html>.

From the Oval Office

by Philip Sacco

Spring has Sprung! And with the new season, we have lots of new members to greet. Keep an eye out to welcome our new members:

April Meeting: The April General Membership meeting will be held at the PSSG on Friday night at 7pm. The May meeting will be back at Emory in room 207 and we will have elections that night.

Swap Table at PSSG: Can you believe it is time for the Peach State Star Gaze already?! I don't know about you, but my mirror is clean, my eyepieces brushed off and I'm ready to go....! I do have a lot of astronomy related accessories which I am bringing along to trade/sell off too. I hope you will remember to bring that extra gear you have laying around to trade/sell also. A 'Swap Table' is something that Bob Smith and I have hoped to pull off at

several of our past DSS, but it just never seemed to come together. This years PSSG will give us all an opportunity to get together and so some constructive exchange. KenPo has scheduled a regular time for it I believe on Saturday morning, but that doesn't mean you can't throw a blanket down at your site....

Richard Blackburn has brought a great idea to my attention as a general club fund raiser. He belongs to a caving club and they accept credit card donations from their membership monthly. It seems that they raise a substantial amount of money monthly in this way. The money raised could go towards such things as....a better selection of new eyepieces for all the telescopes at our observatory, a new latrine on site, kit scopes to develop a loaner program, etc....Keep your ears and eyes open for more on this issue.

New Scope and Storage: The clubs new 24" Techtron will be delivered in May. Phil Bracken is looking for anyone interested in going down on the weekend of May 21 to give it a once over and pick it up. At this time we plan on storing the scope at Vine View Storage Park in Mansfield. It will cost the club \$30 a month. We are open to other suggestions for storage, and if you have an idea, contact Rich Jakiel. Rich is heading up the committee to derive the protocols for the scope.

Elections: Elections of club officers will be held at the May meeting at Emory. You will have to be present to cast your vote, so come and greet the new officers. This is your last chance to voice your interest in a position with the club unless you want a floor nomination, so contact Chrissy Mondell, Rich Jakiel, or Phil Bracken to put your name on the slate.

Mugs are Here: The official AAC Coffee Mugs are in and they look great! They are \$8 if you order one and pick it up at a club meeting, and \$10 at a viewing session or the PSSG (This will include a bottomless mug of coffee or hot Chocolate for the event.) There has been some concern about the styrofoam mugs we have been using as a waste of resources and expense, so get a mug and help the environment and the club out. Besides, the mugs look great, and are easily personalized.

Meade 4500 Raffle: Someone will win a brand new Meade 4500 4 1/2" Newtonian at the PSSG. Tickets are on sale for \$2 and are going fast....! The Raffle will be held on Saturday afternoon of the PSSG, so don't wait until the last minute to get your tickets, time is running out. Call me for info on getting a ticket before the PSSG at 404-296-6332. You don't have to be present to win. Hopefully the winner will be at the PSSG so they can use their new scope that night.

'Til the Peach State.....here's hoping we have CLEAR SKIES!

REMARKS FROM THE OBSERVING CHAIR

The Ladies of the Night ... Sky talk was a success. There were 36 people at the speech at Tallulah Gorge State Park. Sharon gave a great talk. Peter, Harold, and I had our scopes' setup in the parking lot to do some sidewalk astronomy while the ladies gave their talk inside the center. The clouds hindered us the entire time. The only deep sky object viewed was a two minute viewing of the Orion nebula. Then it started to rain. At that point, the crescent moon became visible up in the sky. I guess you could call it a moon shower. When the people finally came outside, the skies would only offer us a brief view of a star here and there. Some people did get to see a star or two. After that, all I could offer was a view of the distant cell tower in the scope. Of course, the weather made it impossible to hold the deep sky session. We had two hardy soles that showed for the DSS anyway. Now that is what I call dedication. I am sure Steve and Harry would have preferred better weather. Clouds and rain were the order of the weekend. Sleeping in a tent during a thunderstorm is not what I had in mind however, that is exactly what Mother Nature gave us.

I hope the changing of months will bring better weather. We did have some clear skies for the open house at Villa Rica on March 27. Even with a bright moon high in the sky, everyone was happy to at least see that. This makes the first clear open house since last October. This month the next open house will take place on April 10. Note that the start time is six p.m. sharp. This will be a third quarter moon instead of the 70 percent moon we had with at the March open house. The deep sky session for April will take place at the Peach State Star Gaze. Here is a chance to observe with other club members and folks from other states.

Little River Canyon over in Alabama is the location of the dark sky observing for the month of May. The date will be May 15. We have a new and better field location. We will be sponsoring this star party along with the people of Von Braun Astronomical Society. My email address and phone number are on the back of this newsletter. You can observe at the new field and stay at Desoto State Park. For information or to make reservations, call one of these numbers (1-800-568-8840) (or 1-256-845-5075). You can camp at the observing field. Vans, cars, and tents are allowed at the observing site. There are no bathroom facilities, electricity, etc at the observing field. A creek runs along the edge of the property with drinkable water. The field is in a dark area. There are no houses or streetlights nearby. Trees block the sky from the ground to 15 degrees up in all directions. The field is on the inside curve of the road and sits above the road. This eliminates glare from passing car headlights. Little River Canyon is a beautiful wilderness area that is run by the National Park Service. The observing field is walking distance to the canyon or a short drive (1 mile) to the nearest overlook. There are many hiking trails. All along Little River there are waterfalls to see. Two of the biggest falls are Desoto Falls and Little River Falls. Make a weekend out of the event. You may prefer to go on over to Huntsville and see the Space Center instead. Huntsville is only about 78 miles northwest of Little River Canyon and the city of Fort Payne.

Note that with the month of April comes our first major meteor shower since the first week of January. Look for the Lyrids to be making an appearance between the days of April 16 and 25. The shower peaks on April 21-22, 1999 in the early morning. The moon sets after 12 midnight-1 am on the morning of the peak. The zenith hourly rates are ten meteors. This shower has on occasion had zenith hourly rates up to one hundred meteors. Radiant of the shower is located in the constellation of Lyra the harp. This is the home of the bright blue white star Vega and the Ring nebula (M57). Lyra is located in the north-east part of the sky. It is a small constellation shaped like a fish.

Astronomy Today

If you can answer this riddle, it will be worth your while. There is a prize waiting for the lucky person who is read up on their Mythology!

Who am I and Where do I lie?

Through the vaulted sky

I thought that I could fly,

Yet, wild horses quite untamed

Would have left me lame,

For not for Jupiter's bolt

But rather a falling jolt,

Here in water I lie

And hear my sisters sigh,

Their tears not clear but yellow,

Who is this young Fellow?

And name the place of his Demise!

Lunatic Challenge #9

by Lunatic #82

Welcome to the April edition of the Lunatic Challenge. I hope you enjoy the selections for your Lunar foray this month. Remember to hunt the domes, and good luck. There are only two more challenges to go to complete the program.

Naked Eye Targets:

1. When referring to the moon, what is a "Dorsa" ?
2. Of all the known moons in our solar system, now numbering 65, where does our moon rank in size?
3. With what major moon feature is the Altai Scarp associated?
4. Mare Moscoviense

Binocular Targets:

1. Crater Maginus - Why does this crater do a disappearing act when the sun gets too high in the moon's sky? (greater than 7-10 days)
2. Crater Longomontanus
3. Crater Alphonsus

Telescope Targets:

1. Crater Linne'
2. Crater Lalande
3. Crater Censorinus
4. After observing these three targets, what is the central theme they share?
5. Crater Pitatus
6. Gemma Frisius
7. Crater Trumpler

Astronomical League

Observing Club Spotlight

THE ARP CLUB

For those of you who love to observe galaxies, take a dive into the Arp Peculiar List of Galaxies. The list contains nothing but galaxies and they are definitely peculiar. I mean peculiar literally. Since this list contains few bright objects, you can splash around in a sea of dim objects. The official mascot of this club is the seal. Arp Arp... Arp Arp. I guess that joke is all wet.

I am sure that you are asking, "What is the Arp Peculiar list of Galaxies?" Now the Random House College dictionary gives the following definition of the word peculiar. Peculiar means strange, odd, uncommon, or unusual. Here all the galaxies of the Arp list have a usual or abnormal shape to them. It's safe to say that normal spiral galaxies aren't here. There are 338 galaxies listed.

Now who is the person who created this list of galaxies? The creator of this list is a man named Halton C. Arp. He spent his time studying distant galaxies. Halton became a photographer of galaxies. The galaxies on this list provided him a more accurate picture of what galaxies' really look like. The idea was to locate the forces that drive a galaxy. He worked at both the Mount Wilson and Palomar Mt observatories. Arp began to concentrate his efforts on peculiar galaxies. His catalog Atlas of Peculiar Galaxies was completed in the 1960's. He went on the study Quasars. Arp developed a theory where peculiar galaxies and quasars exist in the same galaxy.

The Astronomical League originally created the Arp Peculiar Galaxy club for people who use CCD cameras. Of course, we can't leave out astro photographers who use film. The goal is to image/ photograph 100 of the 338 galaxies on the Arp list. You can choose 100 of the 338 galaxies from the list. After the Arp Peculiar Galaxy Club's release, apparently a visual observer can see 100 of the 338 galaxies on the list. So now, the Astronomical League has three certificates for this club. The three ways to complete this club include the following. One way is to image 100 galaxies. Another method is to photograph 100 galaxies. The final way is to observe 100 galaxies. You should mail your observations, images, or astro photos to John Wagoner (at 1409 Sequoia Drive, Plano, TX 75023). After you have completed the task, the Astronomical League will provide you with a certificate and pin. In other words, they will give you a seal of approval.

Your observations should include the following information. One is the galaxy name and number. Two is the time and date of your observation. Three is the magnification (power) used. Four are the seeing conditions of the sky at the time of observation. Five is the type and size of the telescope being used. Six is a description of the galaxy in the eyepiece. You can use the observing log sheets from the Astronomical League book, "A Guide to the Messier Objects." The book is available from the Astronomical League (at Astronomical League Sales, P.O. Box 572, West Burlington, IA. 52655-9998) for a cost of \$4.50 plus postage. You can also get the observing log sheets from the AAC observing chair.

The list is available from the AAC observing chair or you can get a copy of it from the Astronomical League. Contact John Wagoner for more information (at 214-422-1886). For web access, try the Astronomical League site at this address (www.astroleague.org/obsclubs/obsclub.html). The Arp Peculiar Galaxy club form is also available from the American Association of Amateur Astronomers web site (at www.corvus.com). Look for observing programs and click that to find the different observing lists. Note that these files are PDF versions so you need the PDF reader version 3.02. PDF readers can be downloaded from the web free at www.adobe.com.

Arp Peculiar Galaxy Club is for advanced amateur astronomers. The best star atlas to use for this list is the Uranometria 2000 that includes volumes one, two, and the field guide. A good computer software program to use is Megastar.

Computer catalog databases are also available on the web. One such site is the Arizona Database V. 8.0. You should use a twelve-inch telescope. Dark skies are essential with this list. Some galaxies have magnitudes around eighteen. There are at least a hundred galaxies in the Arp Catalog with magnitudes brighter than thirteen and a half.

I've included a list of fifteen galaxies from the Arp catalog that are easy to see. See how many of these you can find. Some of them are famous objects. Even if you decide not to do the 100 Arp Club program, you will have fun finding these galaxies. Some galaxies are visible in a four-inch telescope. Go ahead and wade into that sea of peculiar galaxies.

	NAME	ARP	CONSTELLATION	COORDINATES	
				RA	DEC
1)	Messier 77	3	Cetus	02h 43m	00°1''
2)	NGC 1097	77	Fornax	02h 46m	-30°16''
3)	Messier 82	337	Ursa Major	09h 56m	69°41''
4)	NGC 3395/3396	270	Leo "or	10h 50m	32°59''
5)	M 65/NGC 3628	317	Leo	11h 19m	13°05''
6)	NGC 3994/3995	313	Ursa Major	11h 57m	32°16''
7)	NGC 4038/4039	244	Corvus	12h 01m	-18°51''
8)	NGC 4435/4438	120	Virgo	12h 28m	13°00''
9)	NGC 4485/4490	269	Canes Venatici	12h 31m	41°38''
10)	NGC 4631/4627	281	Canes Venatici	12h 42m	32°32''
11)	M 60/NGC 4647	116	Virgo	12h 43m	11°33''
12)	NGC 5128	153	Centaurus	13h 25m	-43°01''
13)	M 51/NGC 5195	85	Canes Venatici	13h 30m	47°12''
14)	NGC 5426/5427	271	Virgo	14h 03m	-06°04''
15)	NGC 5560/5566	286	Virgo	14h 20m	03°56''

Notes:

- 1 M 77 visible in four inch scope. Near star Delta Cetus.
- 2 NGC 1097A is located to the NW. May need a larger scope to see this companion.
- 3 M82 known as the Cigar galaxy. Long and slender shape. Messier 81 visible in same FOV.
- 4 Galaxies form an upside down v shape. The point faces north.
- 5 Messier 66 is located in the same FOV.
- 6 NGC 3991 another galaxy is located northwest of 3995 and is oval in shape. 3995 is the largest in the FOV and 3994 is smaller and oval in shape.
- 7 Ringtail galaxies in the famous HST image. 10 inch or larger scope needed in order to see the cashew nut shape. North lobe brighter than south lobe.
- 8 NGC 4438 larger galaxy with 4435 northwest in FOV.
- 9 NGC 4490 larger galaxy with elongated shape. Circular in

shape 4485 is NNW of 4490.

- 10 Galaxy 4431 similar to M 82. NGC 4627 NW of 4431.
- 11 Galaxies very close together. Need high power and a ten-inch or larger scope.
- 12 Bright galaxy with dark lane running through the middle of it.
- 13 Whirlpool galaxy. Visible dust lanes of M 51 with connecting bridge to NGC 5195.
- 14 NGC 5427 sits on top of 5426. Small bright cores.
- 15 NGC 5566 bright and elongated in shape. 5560 NW of 5566 with dense look. Need a ten-inch or larger scope to see these galaxies. Another galaxy NGC 5569 NE of 5566. Need larger scope to see it.

The list above comes from the Fort Bend Astronomical Society. Much of the info on Halton C. Arp comes from the web page dedicated to him by Dennis J. Webb. Visit this site if you want more information.

How to win Doorprizes!

By Richard Blackburn

Well, take it from someone that has won doorprizes two months in a row. Keep up with the trivia from Phil. Having answered the question both months, it was the tickets I got for the question that won the doorprize. So this month read Phil's articles and look for his clues/riddles. When you find his riddle, research the answer (it is fun to try to find the Mythology to answer the riddle!) and remember it at the meeting. Don't forget to watch the "what happened today in Astronomy history" which is not in the Focal Point because Phil might use it for his question.

All that said, watch out... I'm gunning for three in a row!

AAC Telescope Fund Raising Drive

The Atlanta Astronomy Club has placed an order for a 24 inch Tectron Dobsonian telescope. We need to raise money to help pay the cost for this new large aperture instrument. Please send whatever you can to help in this cause. All donations in the amounts listed below will be listed on a plaque that will be engraved and placed on the new telescope or at the new observatory when it is built.

\$25 or more: Lunar Donation

\$100 or more: Solar Donation

\$250 or more: Galactic Donation

\$500 or more: Super Nova Donation

Any donation, regardless of the amount will, be most appreciated.

Club Officers

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Stephen Blalock	AAC Webmaster	770-948-9820.
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Tom Buchanan	Light Polution	770-521-2136
*****	Club Graphics	***_***_****
Lynn Crowley	Beginner's Contact and Socials	404-233-6886
Alex Langoussis	Publicity	770-429-8384
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Julie Moore	Hospitality and Refreshments	770-242-6735
Ken Poshedly	Peach State Star Gaze	770-979-9842
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Chrissy Mondel	Ladies of the Night ... Sky	404-296-6332
	<i>cbrissy@NightSky.Org</i>	

AAC CALENDAR of EVENTS

April 10, Saturday	ATM Workshop	Bradley
April 10, Saturday	Orientation	Villa Rica
April 15, Thursday	Peach State	Indian Springs
April 16, Friday	Peach State	Indian Springs
April 17, Saturday	Peach State	Indian Springs
April 18, Sunday	Peach State	Indian Springs
April 24, Saturday	ATM Workshop	Bradley
May 15, Saturday	DSS	L.R.C.
May 21, Friday	General Meeting	Emory, White Hall

Sidewalk Astronomy

The following dates are for Sidewalk Astronomy in the City of Conyers, Outdoor Pavilion. Please volunteer for these dates.

Contact Mark Banks @ 404-257-2766

Friday May 28th Saturday June 26th Friday July 23rd

Friday August 13th

Thursday, April 29th, Russell Elementary School will be having the simulated shuttle launch of Starship 2.

Contact Sharon Carruthers to volunteer or for more info.

Russell Elementary School

3290 S. Hurt Rd, Marietta GA

April 24th, Atlanta-Fulton Public Library System Presents Philip Sacco to speak on Volunteer Serving at: Auburn Avenue Research Library Fourth Floor, Auditorium located at 101 Auburn Avenue, N.E. Atlanta, 4 pm. Followed by reception and Prize Drawing. RSVP by April 21 by calling 404-730-1965.

May 29th- CEWMA, 8 pm, "Mars" by Rich Jakiel. A look into the history of Mars discovery and exploration. The Multimedia presentation is to be followed by a viewing session on site. See next month for further details.

Atlanta Astronomy Club

Friday, April 16th

Dining Hall, Camp McIntosh

Indian Springs State Park

Jackson, Georgia

Since this month's meeting time corresponds with the Peach State Star Gaze, the monthly general meeting will be held at the park.

Come out and enjoy the stars and meet new friends.

See you there!

May 21st

The next general meeting of the club will be back at Emory. This is election night. Mark it on your calendar now!

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

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**.

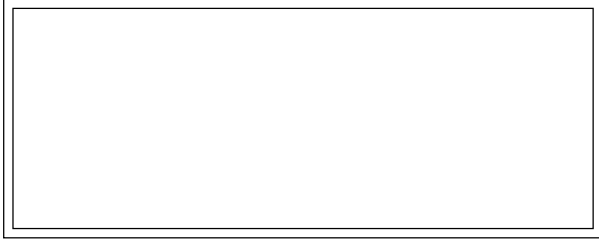
Internet Home Page: <http://stlsfpb.gtri.gatech.edu/astrotxt/atlaastro.html>

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FIRST CLASS



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

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