The Night Sky

The Newsletter of
The Astronomy Club of Akron
www.acaoh.org

Volume 27 Number 5 **May 2005**

Membership Dues to be Paid This Month!

Ramblings of the President
- Dave Jessie

First, let me publicly thank Ray Hyer, chairman of the Astronomy Day Committee, and Jason Shinn, who performed nothing less than feats of magic with cardboard, felt, glue and Velcro! I am truly amazed at the way the displays looked at the Main Branch of the Akron Public Library on Saturday, May 7th

Admittedly, the traffic was less than expected, but the folks that stopped at the displays were genuinely interested in who we are and what we do. I didn't hear one "How many aliens have you fellas seen?" But I DID hear legitimate questions about the planets, Moon, Sun, stars and deep space objects.

Jason answered questions regarding his display of radio reception of Jovian signals – as only Jason could do! Many folks stopped just to look at the beautiful display of members' astrophotos, which were mounted on a contraption of cardboard, furring strips and Velcro (again) that defies description. Completed, it looked like a display in the Smithsonian!

If you haven't yet figured out how pleased and proud I was of our display, let me assure you – I AM! Why, it almost looked like we know what we're doing!.

Now, a proposal…let's not wait until Astronomy Day to set this up again! There are plenty of opportunities to take our wares to the public without waiting another year. Do I have any takers!? Easy now, EASY! Don't all start talking at once! Seriously, too much effort went into this to let it sit around for a year. Taking astronomy to the people can only have a positive effect on them and us as well. I had a great time, and so did the others that contributed their Saturday to this effort.

At the library we had (in alphabetical order): Glenn Cameron, Gregg Crenshaw, Bob Hirst, Pam Hyer, Ray Hyer, Dave Jessie, Paul Koberg, Andy Marek, Doug Mercer, Diane North, Mark North, Justin Phillips, Louis Poda, Jeri Rinehart, Jason Shinn, Gary Smith and Rosaelena Villaseñor. At the ACA Observatory we had: John Crilly, Peter Flohr, Lynn Laux and Ray Paul who showed folks the observatory and the Sun in white-light filtered telescopes. This complemented very nicely the view of the Sun in hydrogen-alpha light we provided at the library location.

A very special thanks to all who contributed their time and effort for this spectacularly successful event! We did ourselves proud. Now, let's do it again real soon!

ACA Member to Speak on Radio Astronomy
- Lynn M. Laux

On Monday, June 13 2005, ACA member Jason Shinn will speaking at the Cuyahoga Astronomical Association general membership meeting. His topic will be "Radio Astronomy." The CAA monthly meetings are held on the second Monday of every month at 7:30 pm at the Cleveland Metroparks Rocky River Nature Center, 24000 Valley Parkway, North Olmsted, Ohio.

Each event begins with a business meeting followed by a refreshment social break to discuss astronomical issues with other members and guests. A lecture is presented by a CAA member or invited guest on some aspect of astronomy, space exploration, weather, or atmospheric phenomena.

Jason is quite active in the ACA and in various radio astronomy associations. He frequently posts his observations on the ACA Yahoo group. If you are interested in learning about amateur radio astronomy, please come out to hear Jason's presentation. For more information on the CAA, visit http://www.cuyastro.org.

The ACA would like to extend a warm welcome to th1e following new members…

Joe Russell
Brian 'Dan' Brooks

We are thrilled to have you as members and look forward to seeing you at ALL club meetings and events!

OFFICERS 2005 – 2006

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OTAA Representative		
Lou Poda		

Activities Calendar

Club

May 27, Monthly Meeting 8 PM
June 4, Chagrin Valley OTAA
June 11, Telescope Seminar at Observatory
June 25, Observatory Program, Jupiter
July 9, CAA OTAA
July 16, Observatory Program, Summer Constellations
July 30, Observatory Program, Summer Jewels

Celestial

May 23, Full Moon
May 26, 2 shadows on Jupiter
June 2, 2 shadows on Jupiter
June 6, New Moon
June 27, Mercury 0.1" from Venus
July 17, Moon occults M4
July 21, Largest Full Moon

The deadline for article submission is **the second Tuesday after each meeting**. All word processing files should be saved in straight ASCII text files or any version of Word to minimize import problems. We will not turn away **any** submission, as long as the article's subject is astronomy or a related topic. If you don't have access to a computer, don't hesitate to write something out long hand. As long as it is legible, I will slave over the keyboard and get it published.

PLEASE SEND IN YOUR ARTICLES!!!!

Send your articles, items for sale, and comments to:
Ray Hyer 725 Brewer St. Akron, OH. 44305 email rhyer@neo.rr.com

Observatory Director's Report

- Ray Paul

It was decided at the last board meeting that we were well overdue in establishing a set of criteria for determining who has access to the club telescope by virtue of obtaining a key to the observatory. With agreement by the board members, I have established that criteria and have listed the following eight rules which will be used for the purpose of determining who will be entitled to ownership of an observatory key.

1. Must have been a member in good standing for a period of no less than one year
   i.e. a. Paid up dues
   b. Attends meetings and functions regularly

2. Must have attended a training session on the use of the 14" Meade LX200GPS telescope.

3. Must have attended a training session on the proper use of the observatory.

4. Must have demonstrated a basic proficiency with telescopes in general and at least a basic knowledge of the night sky.

5. Must demonstrate a knowledge of the use of the telescope and of the use of the observatory to the satisfaction of the observatory director's check list.

6. Must have been an officer of the club or have participated in a standing committee of the club.

7. The Astronomy Club of Akron's executive board reserves the right to revoke all observatory privileges and to demand the return of all keys at it's discretion.

8. The observatory keys MUST NOT be duplicated or loaned or passed on to unqualified persons at any time.

Treasurer's Report: 4/1/05 - 4/30/05

Total Beginning Assets	$7,437.05
Income	
50/50 Drawing	$21.00
Donations	$30.00
Dues	$630.00
Interest on balances	$6.59
Magazine Subscription Paid to ACA	$65.90
Merchandise Sales	$11.93
Expenses	
Magazine Subscription paid by ACA	$(65.90)
Newsletter Expense	$(12.88)
Observatory - Solar filter for 14" SCT	$(138.00)
Astronomy Day materials	$(86.09)
Website Domain name registration (2yr)	$(16.40)
Total Ending Assets	$7,883.20

ACA Executive Board Meeting Minutes from Sunday April 24 2005

- ACA Secretary, Pete Flohr

1) Executive Board Meeting was held April 24, 2005. In attendance were Mr.David Jessie, Mr.John Crilly, Mr. Tom Mino, Mr. Ray Paul, Mr. Gregg Crenshaw, Mr. Gary Smith, Ms.Rosaelena Villasenor, and Mr. Peter Flohr.

2) Discussion on the ACA permanent address was held. The option of using the address of the Portage Lakes State Park was discussed and rejected. The official club address will remain the address of our statutory agent, Mr. Mark Kochheiser.

3) A plaque to commemorate those who made donations for the 14" LX200GPS is to be displayed in the observatory. Ray Paul is to draw up design for approval by the Board.

4) 1,000 double-sided color brochures are to be purchased for $255.00 from Big Red Q in Cuyahoga Falls.

5) Mr. Ray Paul is to be reimbursed for the ACA's new Kendrick solar filter.

6) A list of requirements to hold or obtain an observatory (and privy) key is being constructed.

7) The ladder in the observatory is to be modified in order to stabilize it.

8) During public programs telescopes may not be set up in the observatory.

ACA General Membership Meeting
Minutes from Friday April 22, 2005

- ACA Secretary, Pete Flohr

1.) Our guest speaker was Mr.Craig W. Williams, who spoke from 8:15-9:00. Mr. Williams shared some of his vast knowledge of the Cassini mission to Saturn. He also talked about various rocket propulsion systems and future manned space travel to the outer planets.

2.) Business portion of the meeting started at 9:10

3.) Jason Shinn is in need of more photos for Astronomy day. Please send photos to: TrueMartian@aol.com

4.) Parking fees for the state park have been put on hold.

5.) Secretary's minutes were accepted as printed.

6.) Treasurers report can be found in the newsletter.

7.) Mr. Ray Paul has purchased a solar filter for the ACA's 14" Meade SCT. A vote was unanimous to reimburse Mr. Paul for the purchase price.

8.) ACA public events calendars are available at club meetings, the observatory or on our web page.

9.) The next general membership meeting will be Friday May 27 at the Kiwanis club.

10.) **Memberships renewals for 2005-2006 are due in May. Membership levels have increased by $10 except junior level which will remain at $15**

11.) Messier Marathon (#2) was a great success with Mr. Jim Anderson logging the most objects.

12.) The Big Red Q Quick Print Center in Cuyahoga Falls is to print 1,000 brochures for the ACA at a quoted price of $255.

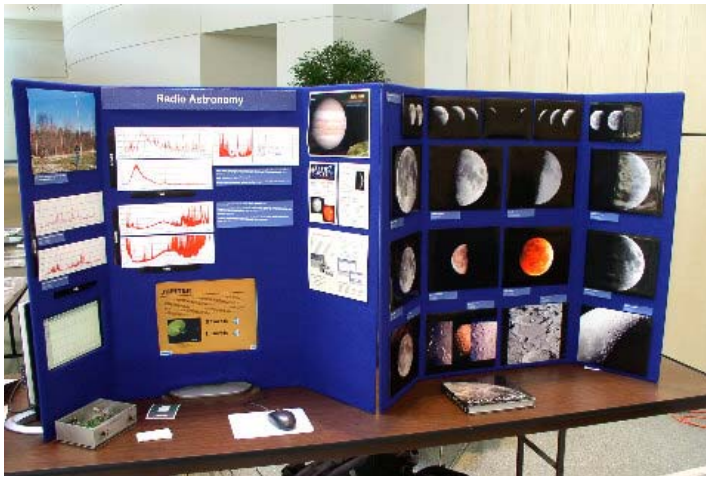
13.) Our observance of Astronomy Day is May 7th. The ACA will be set up in two locations. At the Main Branch of the Akron Public Library from 9am to 4pm and at the observatory in the Portage Lakes State Park from noon to 4pm.

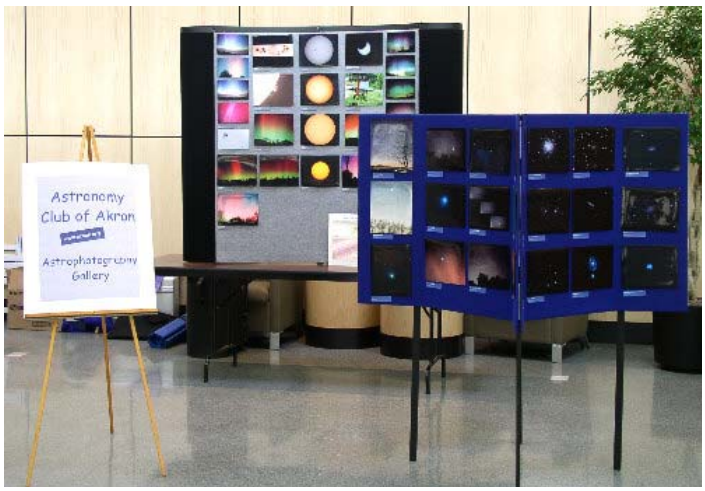
14.) Club elections were held and the new ACA officers are as follows:

President: Mr.David Jessie
Vice President: Mr. John Crilly
Secretary: Mr. Pete Flohr
Treasurer: Mrs. Diane North
Assistant Secretary/Treasurer: Rosaelena Villaseñor
Newsletter Editor: Mr. Ray Hyer

15.) Discussed the star party for club members only to be held on Saturday May 14th in Freeport, OH.

Photos from Astronomy Day at Akron Library main branch





Above - Dave Jessie helps young viewers look at solar activity.

Top Left - Jason's Radio Astronomy display contained an interactive PC program to enable visitors to hear signals from Jupiter and the Sun.

Lower Left - Member Astrophotography makes an impressive sight.

What would I need to do in order to set up a

tube Dobsonian?

By ACA VP, John Crilly

HARDIN'S 8" DEEP SPACE HUNTER WITH A FEW USER MODS

INTRODUCTION

This series of articles is intended to familiarize folks who are in the process of choosing a telescope with the setup procedures required by some of the popular types of instruments available. It is hoped that these descriptions will help a budding astronomer to choose gear that is suited to his needs and observing style, and to avoid surprises when learning of the type and degree of effort required by his new acquisition. Because of this, the article is general in nature and shouldn't be relied upon to enumerate each and every step required for best operation of any given instrument.

I'll be going through the process I would use to help a new telescope owner set up his instrument. Though the primary purpose of the article is, as stated above, to help folks choose a telescope, I'd like to think that having read this article might also help a new telescope owner get set up and observing even there's nobody available to help on that particular night.

TELESCOPE TYPE: TUBE DOBSONIAN

These are very common telescopes, and are frequently recommended as a person's first telescope for a number of reasons. They are uncomplicated to set up, initially requiring no understanding of the celestial coordinate system. They offer the most optical quality and aperture of any common instrument for a given price.

EXAMPLES

Common examples include the Celestron Starhopper, the Hardin Deep Space Hunter, the Orion Sky Quest, and many others. The most common apertures found at entry level are in the 6" to 12" range, though some exist which are larger or smaller.

CHARACTERISTICS OF THE TUBE DOB

(1) A Newtonian optical tube consisting of a solid tube of either steel or Sonotube (fiberglass-coated cardboard) with a parabolic primary mirror at one end, a smaller, flat but tilted secondary mirror near the other, and a focuser extending out the side of tube near the secondary mirror.

BOTTOM OF TUBE - PRIMARY ADJUSTING SCREWS

Note that, although in this photo the telescope is pointed downward, it's not prudent to do so unless you have first verified that the type of primary cell used provides positive retention of the mirror. The primary cells used in some Newtonians would permit the mirror to fall if placed in this position.

TOP OF TUBE - SECONDARY HOLDER & FOCUSER

(2) Disk-shaped elevation bearings fixed to this tube on opposite sides near the balance point as seen in the next photo.

ELEVATION BEARING DISK ON SIDE OF TUBE

(3) A flat ground board attached by a central pivot to a rocker box, which is free to spin as it rests on the ground board. This freedom of motion is provided by bearings or by slippery pads on the top of the ground board.

AZIMUTH PIVOT: INSIDE ROCKERBOX, UNDER GROUNDBOARD

4) The rocker box, which is a framework for two half-round elevation bearing surfaces in which the bearing discs on the optical tube rest. The optical tube is free to rotate in elevation, with the bearings riding on slippery pads installed in the round cutouts in the rocker box.

ELEVATION BEARINGS IN ROCKERBOX

Because the optical tube can swing freely in elevation (vertical motion) and the rocker box can spin freely in azimuth (horizontal motion), the telescope can easily be pointed to any area of the sky.

TYPICAL SETUP PROCEDURES

NOTE: Make certain that the Sun is not permitted to shine into the open top of the tube while assembling the telescope! Keep it covered - and then be sure not to aim it at the Sun anyway, just in case.

SETTING UP THE BASE OR TRIPOD

Setting the telescope up begins with placing the ground board/rocker box combination on a dry, fairly level spot. Many observers prefer to place a pad of indoor-outdoor carpet under the ground board to protect it from moisture, and to give them a non-muddy surface on which to stand. The ground boards and rocker boxes supplied with entry level telescopes are usually made of pressed wood, which is substantially heavier than conventional lumber. The weight of the ground board and rocker box assembly will usually range from under 20 pounds for a 6” to around 40 pounds for a 12” instrument.

INSTALLING THE OPTICAL TUBE OR MOUNT

Before placing the optical tube in position, one should observe the rocker box; these are usually not symmetrical. The tube will typically be permitted to tilt in only one direction by a vertical wall on the box. This wall is installed to provide mechanical rigidity. The optical tube will swing toward and above this wall, but the bottom end of the tube would strike the wall if tilted away from it. Thus, when the optical tube is installed the “top” side of it needs to be placed away from this wall. In the following photo, the optical tube would be able to swing only away from the camera - thus the finderscope should be on the nearer side of the tube

ROCKERBOX SHOWING FRONT WALL

The top of the tube is usually determined by the location of the focuser and finderscope. The focuser is sometimes directly in line with the bearing; if this is the case it could be used in either orientation - but if the finder winds up on the bottom it’ll be very inconvenient later!

RED DOT FINDER, FINDERSCOPE, FOCUSER

Once the orientation of the optical tube is determined it can be lifted and the bearing disks placed into their receptacles on the rocker box. The weight of the optical tube depends on the tube construction and the aperture. A 6” steel optical tube might weigh 10 pounds, while a 12” steel tube might be 40 pounds. The Sonotube (a trade name for cardboard used for concrete molds) units are heavier; a 16” Sonotube optical tube weighs nearly 100 pounds!

YOU DO IT LIKE THIS:

Astronomy Club of Akron member Mark North (no newbie) provided the telescope for these photos and also agreed to act as a model in the following series:

READY TO INSTALL OPTICAL TUBE

INSERTING BEARING DISKS INTO ELEVATION BEARINGS

IT’S A TELESCOPE!

POST-ASSEMBLY PROCEDURES AND TESTS

OPTICAL COLLIMATION

Now it's a telescope, but we have some things to check before it's ready for use. First, we take a quick look at collimation.

SECONDARY HOLDER - NOTE COLLIMATION SCREWS

The three Phillips-head screws around the perimeter of the central disk are used to set the tilt of the secondary mirror. The central screw is used to set the rotation and depth of the secondary.

PRIMARY MIRROR COLLIMATION SCREWS

The two sets (one larger than the other) of screws at the back of the telescope are used to adjust the tilt of the primary mirror. One set of thumbscrews is used to adjust the mirror position and the other set of slotted screws is then tightened to lock it into place.

We aren't going to spend much time on collimation this first night; I'll make sure it's close enough to provide great views and will direct the owner to some resources on the subject so he can learn to do it himself another night. For further info on Newtonian collimation, see the following:

http://www.cloudynights.com/lab/technical/primer.pdf

FINDERSCOPE ALIGNMENT

Next, the finder(s) must be aligned. Without proper finder alignment it'll be very difficult to find objects in the main telescope. In the photos above, the telescope is equipped with both a red dot, unity finder (RDF) and a magnifying finderscope. It's more usual to have only one or the other, and the magnifying finderscope is the one more commonly found on telescopes of this type. The procedure is the same either way - adjustment screws are provided to permit the unit to be aligned with the main telescope. The easy way, if it's not yet dark, is to find a terrestrial target at least 100 yards away and, with the longest focal length eyepiece available inserted into the focuser, to point the telescope toward the object while looking into the eyepiece. It should be easy enough to find the object that way. Then adjust the focuser for the sharpest image and carefully move the telescope until the image is in the center of the field. Without moving the main telescope, now look through the finderscope. If it's close to alignment the object will be visible but not centered. Using the setscrews on the finderscope mount, adjust it until the same object is centered (though much smaller) in that field of view. If it's dark, I suggest using Polaris instead. Polaris is frequently cho-

OBSERVING POINTERS OBJECT SELECTION

At this point, the telescope is ready for observing. I recommend suggesting a number of easy objects that can be seen from that location at that time. I wouldn't choose the sort of faint fuzzies so dear to experienced amateurs - remember the newbie doesn't have those observing skills. It's likely that (1) he won't see them at all and (2) even if he does see them he'll be disappointed in his new telescope. Show him the crowd-pleasers. After all, he's probably never seen them - and certainly not in his new scope!

GOOD TARGETS FOR A TUBE DOB

Remembering that pretty much any telescope is usable for observing pretty much any object, what are the particular strengths and weaknesses of a tube Dobsonian?

Because there are no lenses to introduce chromatic aberration there's no need to avoid the brighter objects. On the other hand, since entry-level Dobs never have tracking, inexperienced operators will tend to have trouble keeping up with the planets at high magnifications. Take a peek, by all means, but I wouldn't spend too long on them. What the dobs do best is to present nice wide images of deep sky objects of reasonable apparent size. Keep the magnification down to 100X or so at first so the operator can learn to track objects. Big globulars, open clusters, and areas of bright nebulosity will give the new telescope owner a good first-light experience. If the site is excellent, some galaxy clusters might be in order.

MODIFICATIONS

Alert readers will have observed that Mark has made some useful modifications to his telescope. He has added legs to the bottom of the ground board to lift the telescope to a more convenient height for his observing style. He has added a red dot finder to use in addition to the standard magnifying finderscope. Finally, the dark material visible on the outside of the optical near the bottom are magnetic sheets which are attracted to the steel tube. They are used to help balance the weight of the extra finder and the large eyepieces he often uses.

The Night Sky
Newsletter of the Astronomy Club of Akron
c/o Ray Hyer, Editor
725 Brewer St
Akron, OH 44305-2103

To join the ACA, ***or to renew your membership***, please fill out the form below, place in an envelope and mail to the address shown in the return address area of the form.

Please be sure to enclose payment for the membership level desired.

The Astronomy Club of Akron
c/o Diane North, Treasurer
795 Mohawk Ave
Akron, OH 44305-1811

Yes! I want to become a member of the Astronomy Club of Akron
www.acaoh.org
(PLEASE PRINT)

NAME: _____ PHONE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

EMAIL ADDRESS: _____

Astronomy Club of Akron annual memberships renew in the month of May.

ADULT (ages 18 and older)..... $30.00	JUNIOR (ages 12 to 17).....$15.00
ADDED ADULT member $15.00	FAMILY MEMBERSHIP $40.00

☐ I realize the full color version of *The Night Sky* newsletter is available for download by members from our web page at www.acaoh.org, but I would rather have the B&W version mailed to my address via USPS.