The Night Sky

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

Volume 27 Number 3 **March 2005**

Ramblings of the President - by Dave Jessie

Of Messier Marathons and Other Flights of Fancy

We're planning a Messier (pronounced 'MESS-yay') Marathon for Friday, March 11th at the ACA Observatory in Portage Lakes State Park. Will we have a successful event? Of course! Will we accomplish our goal of all 110 Messier objects? Almost certainly not! Should we be discouraged? No way!

What exactly IS a Messier Marathon? It's an attempt to find all 110 of Messier's list of objects in a single night. To accomplish this, pristine skies and clear horizons are required and we will have neither.

Nevertheless, we're going to have a ball out all night searching for the things Monsieur Messier listed which he meant for observers to ignore…his list of 'non-comets'. This list was compiled in France around the time of the American Revolution. The instruments he used were nowhere near as good as what we have now, but his skies were significantly darker. He searched for comets. He kept being tripped up by other faint fuzzies in the sky that didn't move with respect to the stars, hence, they weren't comets. He started keeping track of these objects and created a list – a catalog – of things to be ignored.

All comets found by Messier are long forgotten, but his list of 'worthless objects' is now the bible of amateur astronomers. Of his 110 cataloged entries, there are seven diffuse nebula, twelve elliptical galaxies, twenty-nine globular clusters, one irregular galaxy, twenty-eight open clusters, four planetary nebula and twenty-seven spiral galaxies! And we were supposed to IGNORE these!

I don't know about you, but I'm somewhat humbled by this story. How many things that we think are worthless are truly treasures just waiting to be understood? I realize there's snow on the ground and staying out all night in below-freezing temperatures is just plain nuts. Call us crazy, but we're really excited about this! As a matter of fact, I haven't been this psyched up since the Venus transit across the face of the Sun last June 8th. If the weather isn't cooperative, we'll try again four weeks later on Friday, April 8th – another new Moon weekend. The marathon can't possibly be accomplished that weekend – but who cares! We'll be planning our strategies, preparing our equipment, polishing our techniques and having a ball doing all of it.

Astronomy teaches one lesson above all others – patience. If that weekend doesn't cooperate, there's always four weeks later, and four weeks after that, and four weeks…

- Dave Jessie

March Meeting is ONE WEEK EARLY

The ACA is holding its March meeting on the THIRD Friday in March rather than the fourth since the 25th of March is Good Friday. Club elections are coming up and nominations for elected positions are going on as I type. I'd love to have at least two members running for each position. Only by involvement can our Club evolve into what it should be. Please consider running for a position and I hope to see a packed house at the meeting!

- Dave Jessie

OFFICERS 2004 – 2005

President		
Dave Jessie	330-688-9043	djessie@neo.rr.com
Vice President		
John Crilly	330-334-6668	jcrilly@neo.rr.com
Treasurer		
Gary Smith	330-633-9873	garysmith23@juno.com
Secretary		
Pete Flohr	330-645-9153	jlf31@uakron.edu
Assistant Secretary/Treasurer		
Rosaelena Villasenor		revillasenor@hotmail.com
Observatory Director		
Ray Paul	330-658-3125	raymonpaul@brightdsl.net
Trustee, ACA Webmaster		
Glenn Cameron	330-456-2022	glenn@cameronclan.org
Editor, Night Sky		
Ray Hyer	330-784-3970	rhyer@neo.rr.com
Trustee		
Tom Mino	330-923-7704	tjmino@neo.rr.com
Trustee		
Jim Anderson	330-328-5271	starwatcher4863@aol.com
Statutory Agent		
Mark Kochheiser	330-882-3713	mkochheiser@neo.rr.com
OTAA Representative		
Lou Poda		
Past President		
Gregg Crenshaw	330-785-7377	gbcrenshaw@sbcglobal.net

Activities Calendar

Club

March 11, 12 Messier Marathon
March 12, Observatory Open House and Star Party 7:30 PM
March 18, Monthly Meeting 8 PM
April 9, Observatory Open House and Star Party 8 PM
April 16, Astronomy Day 2005
April 22, Monthly Meeting 8 PM

Celestial

March 10, New Moon
March 17, First Quarter Moon
March 20, Vernal Equinox
March 25, Full Moon
April 3, Jupiter at Opposition
April 8, New Moon
April 11, Moon 1.3 deg. S. of Pleiades
April 22, Lyrid Meteors
April 24, Full Moon

The deadline for article submission is **two weeks before the next 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 key-board 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

Minutes from the February 25 Membership Meeting

1. The ACA general membership meeting started at 8:00 pm.
2. The speaker for the evening was the ACA's V.P. Mr. John Crilly. Mr. Crilly shared his vast expertise of Newtonian Telescopes.
3. Treasurer's report can be found in the newsletter.
4. Observatory director Mr. Ray Paul will have a telescope training session. Time and date to be announced. Stay tuned.
5. New events calendars are now available at any general membership meeting while supplies last.
6. The next ACA general membership meeting will be Friday March 18 at 8:00 pm
7. The holiday dinner was a big success.
8. Congratulations Ray Hyer. Mr. Hyer was elected the new night sky editor.
9. The nominating committee, chairperson Mark North, assisted by Diane North and Tom Mino, are now taking nominations for the next ACA general elections. Elections will be held for President, Vice President, Treasurer, Secretary, Assistant Secretary/ Treasurer and Night Sky Editor.
10. Messier Marathon 2005 will be held at the ACA observatory March 11-12th.
11. Observatory open house will be March 12th.
12. Mr. Scott Hortsman proposed some ideas for the Big Star Party. Further discussion to follow Mr. Hortsman can be reached at shotsman@neo.rr.com
13. Mr. Ray Hyer is gathering ideas for Astronomy Day. Saturday April 16th. Mr. Hyer can be reached at rhyer@neo.rr.com

ACA Secretary, Peter Flohr

Treasurer's Report: 2/1/05 - 2/28/05

Total Beginning Assets	$8,661.57
Income	
50/50 Drawings	$ 57.00
Donations	$ 45.64
Dues	$ 95.00
Holiday Dinner RSVP's	$ 96.00
Interest on balances	$ 6.14
Magazine Subscription Paid to ACA	$ 284.70
Merchandise Sales	$ 12.00
Expenses	
Catered holiday dinner	$ (832.60)
Magazine Subscription paid by ACA	$ (284.70)
Newsletter Expense	$ (22.20)
2005 Observatory Schedules - 2000 ct	$ (106.54)
Total Ending Assets	$8,012.01

Astronomy Day is coming!

Astronomy Day is almost here… Saturday, April 16th, to be exact. What are we doing? Nothing on that day and for several reasons.

For one, some of our prominent members are going to be out of town – at NEAF (North East Astronomy Forum) in Suffern, NY just outside New York City at what is arguably the premier hardware expo in the country. More than 80 vendors of note – including our own Scott Horstman and his 'Backyard Observatories' will be represented. Just think, Scott's booth could be right next to Uncle Al Nagler of TeleVue who is always there.

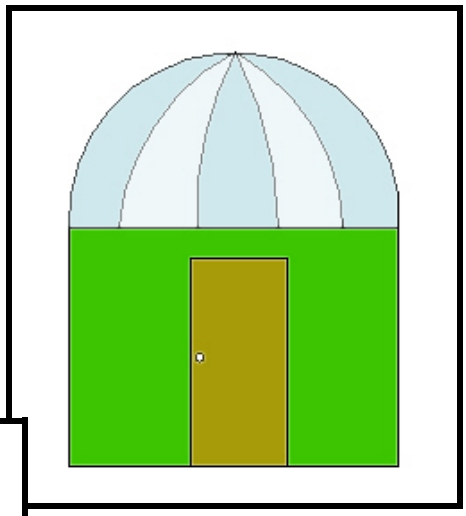
Another reason to postpone our Astronomy Day event is that we must plan around the likelihood of good weather to maximize the attendance of the public. The goal here is to involve folks in some astronomy activities in which they otherwise wouldn't participate.

Chapel Hill Mall has been a serious disappointment in the recent past, so Ray Hyer is chairing a committee to come up with new and exciting ways to involve the public – and to showcase our club in the process. Do you have any ideas? Ray would welcome them. We'll be signing up members to help with whatever Ray and the Astronomy Day Committee agree is the direction the ACA should take. Your help will be greatly appreciated!

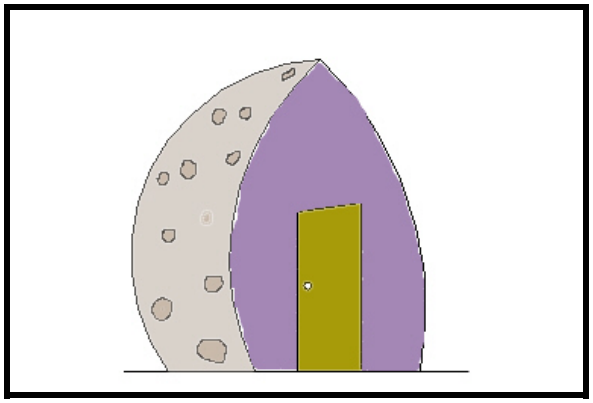
When will it be? A yet-to-be-decided Saturday in mid-May would be my guess. We'll discuss this at the ACA meeting on Friday, March 18th.

- Dave Jessie

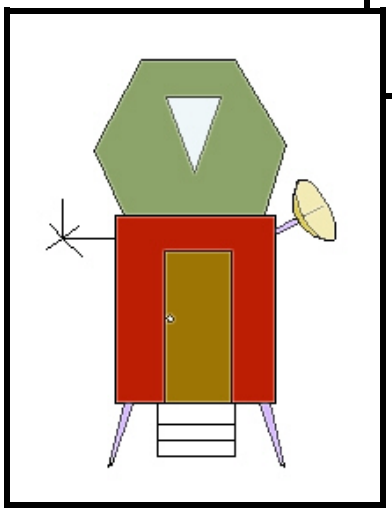
Since the ACA is considering the construction of a storage shed at the observatory site, the staff of the Night Sky offers these unique design ideas to make our shed astronomically correct!



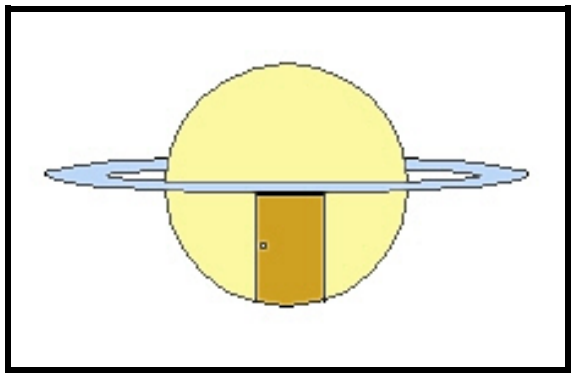
The "ACA LOGO" Shed



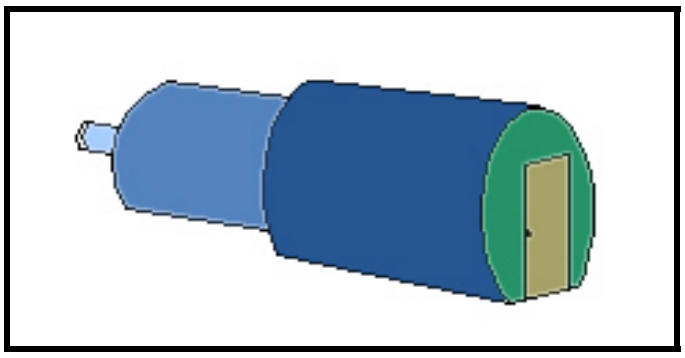
The "Surface of the Moon" Shed



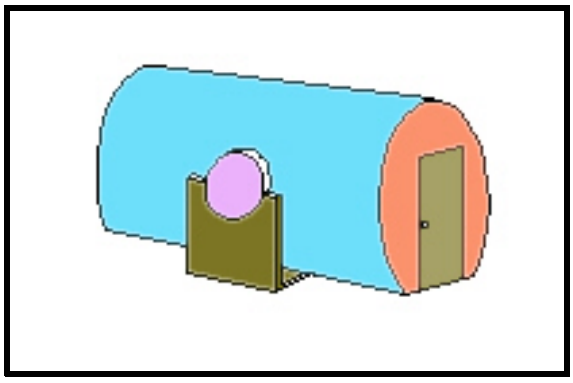
The "Lunar Lander" Shed



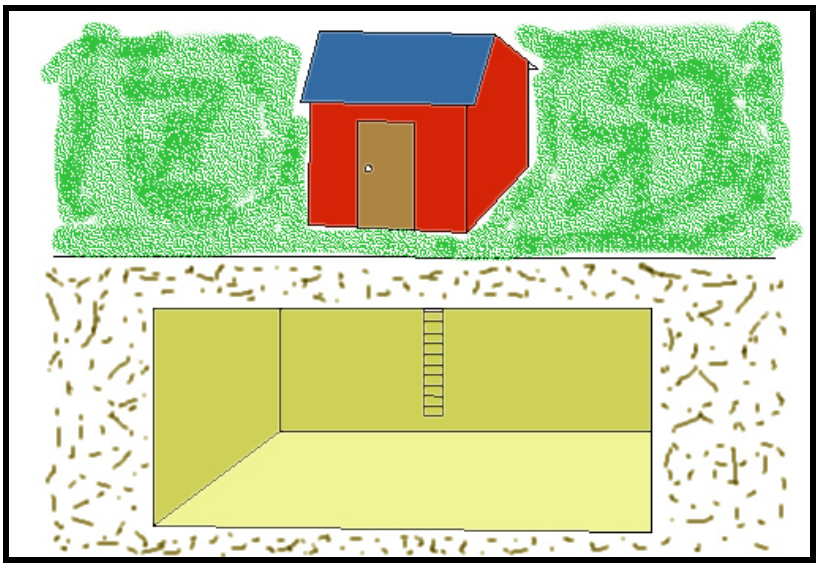
The "Planetary" Shed



The "Refractor" Shed



The "Dobsonian" Shed



The "Hidden Meeting Room" Shed

A QUICK LOOK AT IMAGING WITH THE CANON 300D

The Canon Digital Rebel (300D) created considerable excitement among the astronomy crowd when it was released. In the year since then, many fine astronomical images have been produced using them, and the prices have even dropped substantially from the introductory price of $1000.

The Digital Rebel is a digital single lens reflex camera. Like a 35mm SLR, the image in the viewfinder come through the same optical path as the photographed image, being reflected into the viewfinder by a mirror which moves out of the way during an exposure. It can be used with a variety of interchangeable lenses, but one of the best features for us is that the lens can be removed entirely and a telescope substituted. Its imaging sensor is slightly smaller than a 35mm film slide, which makes it much larger than those found in most dedicated CCD imagers and webcams. This permits a vastly greater field of view and higher resolution (the pixels themselves are about the same size as the others, about 7 microns). Like an SLR, the 300D has a "bulb" mode which permits indefinite exposures. Because the chip isn't cooled, exposures are normally limited to five or ten minutes by electrical noise. At my location, skyglow cuts my exposure time to less than the camera could deliver so it's not an issue for me.

I operate my Digital Rebel via a PC, which permits me to set up a series of exposures at a given duration to be taken without my intervention. Depending on the object, I normally shoot ten or more exposures at whatever duration is appropriate. Multiple exposures can be summed or averaged together, either increasing the system sensitivity or cancelling noise. It is used either at Cassegrainian focus on my 12" F/10 SCT or at prime focus on my 80mm F/7.5 refractor. I use the standard camera batteries in mine, and find that I must change the battery every three hours or so under steady long exposure use.

This is by far the easiest setup I've ever used for imaging. All that is required is a tracking telescope, a 300D, a standard T-adaptor to fit the telescope, and a T ring to fit the camera. Depending on the area of sky and the focal length being used, exposures longer than one minute or so may require an equatorially mounted telescope. I use a fork-mounted LX200 on a wedge and mount the refractor on top of it so they both track equatorially. I find that I can shoot up to ten minutes without guiding before tracking errors cause trailing of images.

Although the field of view is limited when using the SCT (focal length is 3000mm), the large chip of the 300D permits deep sky imaging of galaxies and planetary nebulae. In the 600mm focal length refractor, larger nebulae, star clusters, and galaxy groups are within reach.

Because at prime focus the image scale is determined only by chip size and telescope focal length, you can see that the 300D will image a wider field than any of the above digital imagers.

For examples of what the Rebel can do under light-polluted skies, please see the next page.

- John Crilly
jcrilly@neo.rr.com

For comparison, common imaging element sizes are:

CAMERA	CHIP SIZE	FOV (arcminutes) at 1000mm
SAC-7	2.7mm X 3.6mm	9' X 12'
Meade DSI	3.7mm X 4.9mm	13' X 17'
SBIG ST-7	4.6mm X 6.9mm	16' X 24'
SBIG ST-8	9.2mm X 13.8mm	31' X 47'
Digital Rebel	15mm X 22.5mm	56' X 73'
35mm film	24mm X 36mm	90' X 117'

The ACA would like to extend a warm welcome to the following new members!

Randall Carleton
David & Pam Feltner

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

M1 Taken at Cassegrainian focus, 12" LX200 F/10, Canon 300D ISO400, 5 X 300 seconds11/2004

Double Cluster taken at prime focus, ED80 at F/7.5, Canon 300D ISO400, 2 X 30 seconds,

Rosette nebula - ED80 and Canon 300D, prime focus, 5 X 300 seconds at ISO 400, 1/15/05

The evening of Saturday Feb. 12 was clear and cold. A group of club members gathered at the observatory site to see how long they could take the cold. A long exposure photo revealed that some of the "observers" spent much time soaking up the energy from a propane heater.

Ray Hyer, newsletter photographer

Homemade Spectrograph

By Glenn R. Cameron

While cruising around my usual astronomy related Yahoo! Groups, I came across an interesting reference to a web site that taught me how to build my own homemade spectrograph: http://www.uwm.edu/~awschwab/specweb.htm

After months of procrastination I finally got around to looking through a narrow slit at light that has been split into its composite colors. This is an easy to build and fascinating to use, little toy. The web site led me to a couple of different sets of patterns and directions on assembling a simple spectrograph.

I started out with plain black poster board. I had to cut out an 8-1/2 by 11 inch rectangle of the poster board that would fit into the paper feed of my inkjet printer. Then I printed one of the patterns I found onto the poster board. Rather, I printed a single page PDF document that contained directions and two copies of the spectrograph pattern. Under bright room light I could see the pattern well enough and cut it out with scissors. I had to print the page a second time onto plain white printer paper to be able to take the directions with me to my work area.

The pattern shows solid lines where cuts are made and dashed lines where folds are made. The result is what looks like a small three dimensional replica of a Telrad finder. Folding was easy and all joints were fastened with ordinary plastic wrapping tape. Glue might make the end result more attractive but it hardly matters. This is not meant to be a piece of rugged scientific equipment.

The hardest part is cutting the approximately 20 mm long by 0.5 mm wide slit through which the light source enters the contraption. A hobbyist's knife, a straight edge, and a little patience is all that was needed. If the slit is too wide, a piece of opaque tape can be used narrow it.

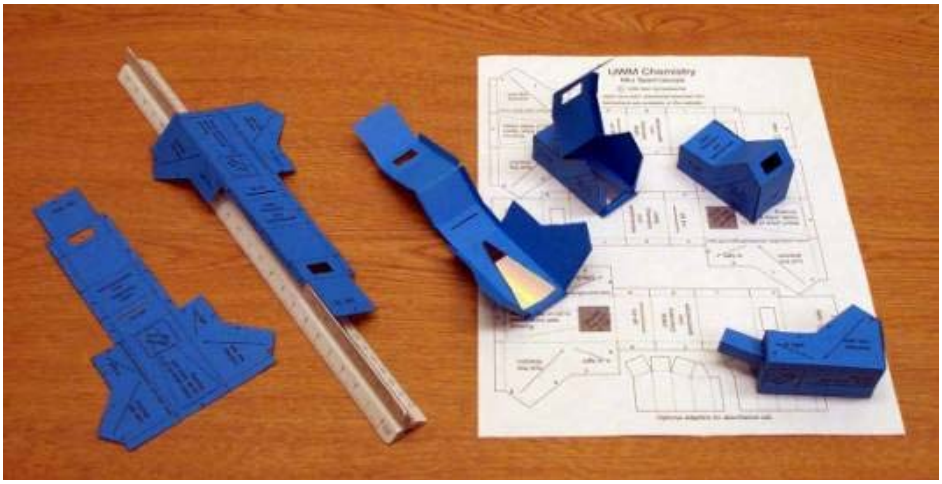
The second hardest thing to do was to cut the pie shaped wedge from an unneeded CD. This provides the diffraction grating for our modest instrument. Since a CD can be cut into about sixteen usable wedge sections of the right size, a certain behemoth online service provider has kindly provided the average American household with enough raw materials to make approximately 11 million spectrographs! The instructions suggest using "stout scissors" to cut the wedge from the CD but I got far better results with a hobbyist's knife and a straight edge. Just score a couple of deep lines into the shiny side of the CD and snap out the wedge along the lines. It may take a little practice but one CD should be enough material to perfect the technique. It's like cutting bathroom tile.

After assembly I had fun looking at different light sources. Note: Never point this device at the sun! I looked at most household light bulbs and saw a continuous rainbow of color. Across the street, a street light showed a thin red band then a wider black band followed by a thin yellow band. After the yellow band and another wider black band was a thin green band. A much wider black band separated the green band with a thin violet band.

Holy smokes, this thing really works!

I found a dearth of different types of light sources in my house but used my home computer to provide various full screen colors. I used the paint program to give me a full red screen, then a white screen, then a green screen, etc. Each screen gave me different results in my homemade spectrograph. None of these solid colors was composed only of the apparent frequency of light. The spectrograph doesn't lie!

This was a delightful project and it was fun sharing it with my kids. I highly recommend it to anyone with a passing interest in spectroscopy. I'm looking forward to trying it out on the Moon, Venus, and maybe even Sirius.



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

The Astronomy Club of Akron
c/o Gary Smith, Treasurer
754 Annapolis Ave
Akron, OH 44310-1642

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.