The Night Sky

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

Volume 32 Number 6 **June 2010**

SUMMER BREAK! NO MEETING AT KIWANIS FOR JUNE.

Ramblings of the President

By Dave Jessie

Instead of me droning on endlessly about some astro-minutia, let me report on something truly important that you and your fellow Club members did this past Friday, June 4th - Camp CHOPS. As most of you know, the ACA is invited to set up telescopes at Camp Christopher in Akron on the first Friday of June each year. All the campers and counselors are, or have, undergoing treatment for cancer at Children's Hospital in Akron. Each year the Club performs this extremely worthwhile function and the past two years, we've had more participation than we've ever had before. This year, the following members were in attendance: Leslie Clausen, Peter Clausen, Cindy Gualtiere, Mark Gualtiere, Fred Huffman, David Jessie, Ron Kalinoski, Jeff Kreidler, Tom Mino, Norm Schmidt, Lew Snodgrass, and Rosaelena Villaseñor. Sadly, the skies remained completely cloudy the entire time so the children couldn't see the stars, clusters and planets as we usually show them. Truthfully, though, the campers handled the cloudy conditions better than we did. They enjoyed seeing and touching the telescopes, watching the GLPs (Green Laser Pointers) point to distant tree tops, and observing the "Robo-Scopes" (as Mark Gualtiere named his goto Meade) whir around and imagining the sights they could have seen if the weather had cooperated. Peter & Leslie Clausen had the forethought to bring astro-images that Peter has taken and printed in post-card sized handouts. These were a huge hit and we're indebted to Peter & Leslie for coming up with this fantastic idea. Ron Kalinoski had the brilliant idea of showing the campers the "Spider Web Nebula", an actual spider web constructed close enough to a distant overhead light for his telescope to show. Enough talk - now for some photos from the event.

(photos con't page 7)

Article by Dave Jessie.
ACA President

ACA members Dave Jessie, Norm Schmidt, and Rosaelena Villaseñor attend the Camp CHOPS public outreach event.

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Activities Calendar

Club

June 4 - OUTREACH: Camp CHOPS at Camp Christopher 08:00 pm EDT (00:00UT)
June 5 - OBSERVATORY: Public Event 09:00 pm EDT (01:00UT)
June 12 - OBSERVATORY: Public Event 09:00 pm EDT (01:00UT)
June 12 - CVAS-OTAA meeting at Indian Hill Observatory, Huntsburg, OH 09:00 pm EDT (01:00UT)
June 19 - OBSERVATORY: Public Event Solar/Lunar Hotdog Roast 06:00 pm EDT (10:00UT)

Celestial*

June 3 - Moon at apogee (farthest) at 17h UT.
June 4 - Last Quarter moon at 22:13 UT.
June 12 - New Moon at 11:15 UT.
June 15 - Moon at perigee (closest) at 15h UT.
June 19 - First Quarter moon at 4:29 UT.
June 21 - Summer Solstice at 11:29 UT.
June 26 - Full Moon at 11:30 UT.
June 26 - Partial Eclipse of the moon from 10:17 to 13:00 UT, mid-eclipse at 11:38 UT.

**Source: www.skymaps.com*

The deadline for article submission is the 6th of each month. 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 relevant to our forum. If you do not have access to a computer a handwritten article will suffice as long as it is legible. Any images submitted should be saved in .jpg format.

— PLEASE SEND IN YOUR ARTICLES —

Send your articles, items for sale, and comments to:
Jason Shinn
873A North Point Dr. Akron, OH 44313
truemartian@aol.com

The ACA would like to extend a warm welcome to our newest members:

Chad Hartung and family
Mark & Cindy Gualtieri

We are thrilled to have you with us and look forward to seeing you at all Club functions!

The Hercules Gobular Cluster by ACA Member Len Marek. M13 with the 12" at f/10 and the ST8300M camera only in luminance. This is the result of 11x3 minute subs, no flats.

The Leo Trio by ACA Member John Crilly. Canon 300D (first use in a number of years!) and FSQ-106N.

May Treasurer's Report

By Lew Snodgrass

5/1/2010 Through 5/31/2010

Checking Beginning Balance	**$2,021.45**
Income	
Dues	160.00
Total Income	**$160.00**
Expenses	
URL Fee	17.76
Total Expenses	**$17.76**
Income Less Expenses	**$142.24**
Checking Ending Balance	**$2,163.69**
Charter One Ending Balance	**$2,163.69**
Reconciled Difference	**$0.00**
Savings Opening Balance	**$5,926.23**
Earned Interest	0.50
Savings Closing Balance	**$5,926.73**
ACA Checking Balance	2,163.29
ACA Savings Balance	5,926.73
Petty Cash	50.00
Total	**$8,140.02**

Article by Lew Snodgrass
ACA Treasurer

The Moon, March 25, 2010 by ACA Member Jason Shinn. Meade LXD55 6 inch refractor with Canon Digital Rebel XT.

Observatory Report

By Ron Kalinoski

So far, 2010 sky conditions for our star parties have been less than stellar. The May 22nd star party was no exception with thunderstorms making their appearance right up to star party time. With some promise of drier air to the west we decided to get together to talk about telescopes during our annual telescope seminar. We setup our equipment on the observatory brick pad and waited for the public to show up. The showpiece of the seminar was the Zimmerman refractor recently refurbished by Robert Watkins in 2008. The massive piece of brass & aluminum let the arriving public know they were in for a treat. Also setup on the brick pad was the club owned 8" Dobsonian, and Fred Huffman's binoculars with homemade parallelogram tripod. This event is mainly attended by public enthusiasts interested in entering the astronomical field. The earlier storms didn't stop them from coming out to hear our talk. In all, about 25 people attended the seminar. Dave Jessie, John Crilly, Fred Huffman, and I discussed the function, use, and characteristics of refractors, reflectors, Schmidt-Cassegrains, and binoculars. Some of the public brought out their telescopes to ask for assistance on setup and collimation. Hot coffee, cookies, and salami were provided by Rosaelena. After the talk we had partly cloudy skies so we pointed the telescopes at the Moon and Saturn.

Severe weather threatened our June 5th star party so we cancelled the event. Members have two more opportunities in June to attend a star party. On June 12th, our star party starts off with a talk explaining the equatorial coordinate system astronomers use to find celestial objects. We'll also explore various techniques used to find objects in the sky using a manual telescope. Our annual Solar Lunar Hotdog Roast is scheduled for June 19th. Solar and Lunar observing will be occurring throughout the event. After the hotdog roast, two of our members will give talks on the Sun and Moon. After sunset, we'll have an observing session if the skies allow. This is a very popular event with members and the public.

This month Fred Huffman and I did some clean up work around the observatory. We removed lumber stored on the side of the building previously left there from an observatory project. We removed the remaining crushed limestone from the grounds and weed-whacked that area; previously inaccessible to park mowers. Now, all we need is clear skies!

Article by Ron Kalinoski
ACA Observatory Director

- INSERT YOUR SUBMISSION HERE -

THE NIGHT SKY NEWSLETTER IS LOOKING TO PUBLISH YOUR ARTICLES!
SHARE YOUR THOUGHTS, EXPERIENCES, STORIES, OPINIONS, LATEST ASTRO-IMAGES, AND ADVICE WITH YOUR FELLOW AMATEUR ASTRONOMERS.

ARTICLES MUST BE SUBMITTED BY THE SIXTH OF EACH MONTH.
ALL IMAGES MUST BE SAVED IN .JPG FORMAT.
SUBMIT YOUR ARTICLES VIA E-MAIL TO:

JASON SHINN
truemartian@aol.com

OR VIA SNAIL-MAIL:

JASON SHINN
873A North Point Dr.
Akron, OH 44313

Deep Space Imaging Gear - What Do You Need?

By John Crilly

I've been imaging for a number of years and have tried just about everything. I'd like to describe some of what I've experienced along the way in order to help folks judge what they might need as well as what options they might explore if they decide to get heavily involved. I'll start with the optics this month only because I recently changed everything around here and it's what I've been thinking about most recently! Then I'll talk about mounts and cameras. The conventional wisdom is that the three most critical pieces of imaging gear are the mount, the mount, and the mount. In truth, all are important; one can't grab images without covering all three bases. Some folks add a dark site to the list of required gear, but I've spent the last several years proving that location isn't that critical. I'll talk about the selections I've made and what led me to prefer those choices.

Illustration 1: AT10RC on Takahashi NJP at Urban Observatory April, 2010

OPTICS

I've shot through most everything. Doublet achromats, Petzval achromats, doublet "apo" refractors, real triplet apo refractors, Petzval apo refractors. Schmidt-Newtonians, Schmidt-Cassegrains, Maksutov-Newtonians, Maksutov-Cassegrains, Classical Cassegrains, and Ritchey-Chretiens. They all work, and all can capture images. What I notice is that my productivity goes way up when I have available something that is very easy to use and which delivers aberration-free light frames to minimize processing effort. Imaging is more efficient and more fun when it's easier.

One thing that's very different about selecting an imaging telescope is that the first thing one considers is focal length. Unlike a visual setup, where one will select an eyepiece to give the desired magnification and field of view, an imaging setup is locked in by the size of the camera chip and the focal length. One must select a focal length that is appropriate for the intended target in view of the camera that will be used. For this reason, most deep space imagers have as their most basic gear one instrument of short focal length for large objects and another one, significantly longer, for smaller and more distant objects.

My short focal length instrument of choice is a Takahashi FSQ-106N Petzval apochromatic refractor. It provides a large flat field so I can use any camera available without the necessity of adding outboard corrective optics. It is very fast (F/5) and very short optically (530mm) so I get the widest practical field of view. It has a rock-solid 4" rack and pinion focuser so there's no chance of focuser slip or slop. Other options for short focal lengths exist – one brand new one that seems to be a real bargain is Astrotech's AT65EDQ. It's even shorter at 390mm and has an internal field flattener yet goes for an amazing $550. Other Petzval apo refractors are offered by Takahashi, Tele Vue, and Vixen. One could also select any high-quality apo refractor coupled with an appropriate field flattener. Those can work just as well as a Petzval system; the only inherent compromise is in finding and providing the precisely correct spacing between the flattener and the image plane (known as "metal back distance"). The key is to select an instrument with very good color control. Chromatic aberration that can't be seen in the eyepiece will make a much bigger impression on the camera – if it's there you'll see it in your images and cleaning that up just makes more work for you.

It doesn't have to be a refractor, either. Fast Newtonian astrographs exist – and some are at the very top of the market. They don't scale down well, though, so they can't get you down to the 500mm range. Same for the Mak-Newts and the Schmidt-Newts. Still, all are options if you want to go a little longer (750mm-1200mm). Issues are metal back distances for coma correctors on Newts, and back focus requirements for all three variants. Also, unless designed specifically for imaging, Newt variants always have too small a secondary to properly illuminate a decent-sized camera chip.

For smaller objects you'll need more focal length. This translates to both a larger optical tube (more load on the mount) and a larger image scale (more precision required from the mount) so just how long you want to go will depend to some extent on what your mount can deliver. I'm OK here at least up to 3900mm but I find that 2000mm gives me a very useful field of view and image scale so I tend to stay around there (yes, there's quite a gap between 500mm and 2000mm so I try to have something around 1000mm available also).

My current longer focal length choice is the AstroTech AT10RC at F/8 (2000mm focal length). It's great that someone finally capitalized on the economy of scale offered by modern glass fabrication techniques to make these designs available to those of us unwilling to pay $10,000 for a 10" telescope. This thing really works. Build quality is surely below that of the OGS and RCOS products, but whatever compromises were made are far from obvious, either visibly or functionally. At about $2700 it's still pricey for a 10" telescope but not for a 10" astrograph. It's about the price of a C11 Edge HD – but disposes of a long list of SCT issues that the Edge only addresses without actually eliminating. The open tube means no corrector to collect dew and with the built-in fans means that cooling is quite fast; the non-moving primary mirror ends mirror flop and focus/collimation shift as well as permitting imaging trains of varying lengths to be used without shifting the primary/secondary distance away from optimum; the optical design provides coma-free images without added refractive optics both ahead of and after the objective; the huge central baffle tube provides a tremendous unvignetted field.

That all looks good on paper – but I was convinced to try one after seeing it in person. The build quality was obvious and implied that, if equal attention had been paid to the optics, it would be a winner. After taking it home and setting it up, I quickly found that it really does appear to be everything I hoped it would be. I get a keeper image or two every time I shoot – and that makes it both fun and productive. Image processing is minimal; there's nothing to hide or to fix. Better yet, if one wants to save a few bucks there's an 8" version that is proportionately very under-priced. It's only $1400 and though it doesn't have the fans it DOES have a nifty carbon fiber tube and on a Cassegrain that makes a big difference. It's a real bargain. I had one but switched to the 10" because the focal length was more appropriate to my needs. The 10" is available with a CF tube also (for $1200 extra); I declined that option.

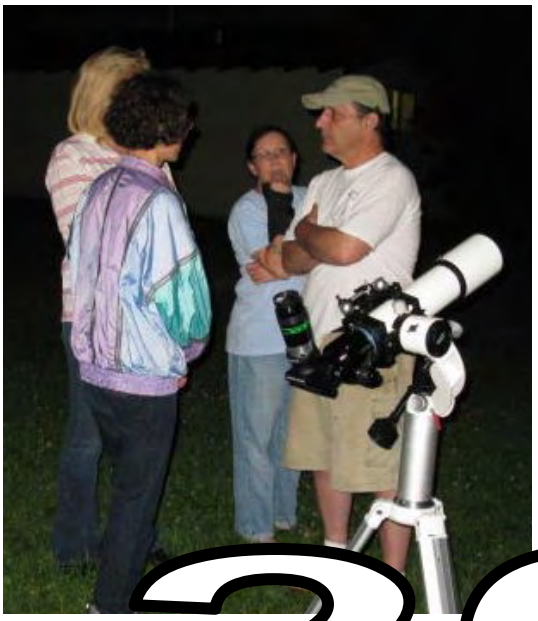
The only other instrument I ever liked this much in this focal length range is the 178ED 7" F/9 ED doublet refractor – and that thing is HUGE, making much greater demands on an imaging mount and disqualifying most mounts in general use by amateurs. At 27 pounds and with the short tube, the AT10RC would sit nicely on a CGE or even a CGEM. An EM -200 would be a killer mount for this tube. Other optical tubes that I liked a lot were the C14 and the 12" Meade SCT (had one of those in the observatory for a number of productive years) and the 12" Meade RCX. Aperture has its advantages but those also required more mount than the 10" RC needs. It's nice to be over-mounted for a change; I think the AT10RC will be here for a long time (though I did see a prototype AT12RC at NEAF...).

Article by ACA Member
John Crilly

CAMP CHOPS

(above) Campers by the lake. (center) Jeff Kreidler checking his compass. (top right) Tom Mino & Lew Snodgrass.

(lower left) Leslie Clausen, Rosaelena Villaseñor, Cindy & Mark Gualtieri. (below) Campers enjoying the "Spider Web Nebula in Ron Kalinoski's 8" SCT.



2010

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

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JUNIOR (ages 12 to 17) ☐ $15.00
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