ASTRONOMY CLUB OF AKRON
www.acaoh.org

The Night Sky

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

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Narrowband Imaging

John Crilly

In the magazines and on the internet we sometimes see astronomical images labeled "narrowband". Some of these look odd – objects that we know have a predominantly red color look yellow or green instead. The reason for this is that the photographer decided that he wanted it to look that way. Why?

In scientific imaging things can't always be presented in true color. Sometimes detectors are being used to pick up invisible spectra such as X-ray or ultraviolet. If people want to be able to see the resulting image then those wavelengths must be rendered in "false color", assigning arbitrary visible colors to the data so it is visible. Sometimes images of visible light are rendered in false color so that contrast between objects is artificially enhanced for easy detection. For these reasons, folks are accustomed to seeing odd-looking images in scientific publications. Many Hubble photos are rendered in false color to artificially enhance contrast for scientific study

Narrowband imaging uses very narrow bandpass filters (line filters) so that only a restricted portion of the light from an object is recorded. This permits resolving more detail in many nebulae – so amateur astronomers sometimes use this technique for their images. Commonly used filters are Ha (which is in the red portion of the spectrum.), OIII (which is in the green portion of the spectrum) and SII (which is in the yellow portion of the spectrum).

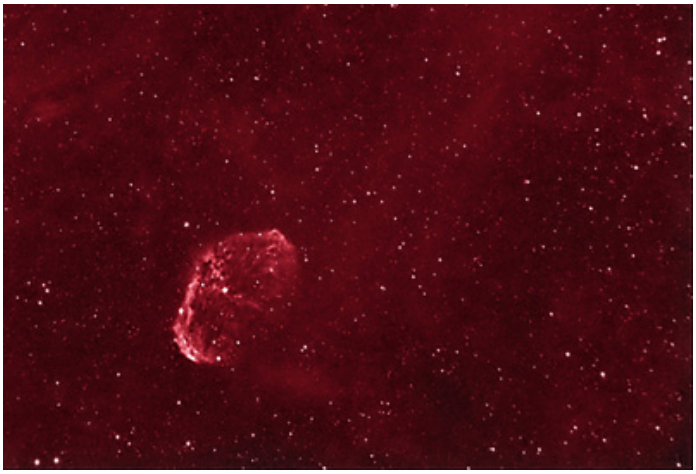
In conventional (RGB) imaging, broader filters are used to generate red, green, and blue frames which are then assigned their proper colors and combined into color images. One could just as easily assign red to green, yellow to red, and green to blue. The image would still contain all the data, and would appear very 'scientific" – but it would also appear very odd.

Imagers never do that with RGB frames – but some narrowband imagers do precisely that with their Ha/OIII/SII frames. They render their Ha frames (which should be red) in green, their SII frames (which should be yellow) in red, and their OIII frames (which should be green) in blue. It doesn't lose any data, but it makes them look like Hubble photos since that's the palette Hubble shots frequently use. Since the images won't be used for science, but to look at, this seems a very odd choice.

There are ways to use narrowband filters and still render natural-looking images. One is to make a luminance frame using the narrowband filter and then add color in-

(Continued on page 3)

Bubble Nebula – Ha, red, and blue combined



Crescent Nebula – Ha only, rendered in red and the stars falsely colored white

OFFICERS 2006 – 2007

President		
Dave Jessie	330-688-9043	djessie@neo.rr.com
Vice President		
John Crilly	330-334-6668	jcrilly@neo.rr.com
Treasurer		
Steve Rohweder	330-896-2849	srohweder@neo.rr.com
Secretary		
John Phillips	330-784-7922	jphillips1@neo.rr.com
Assistant Secretary/Treasurer		
Rosaelena Villaseñor		revillasenor@hotmail.com
Observatory Director		
Ron Kalinoski	330-837-5848	jones_ronbo@worldnet.att.net
ACA Webmaster		
Glenn Cameron	330-456-2022	glenn@cameronclan.org
Editor, Night Sky		
Pat & Justin Phillips	330-784-7922	phillipsaca@gmail.com
Trustee (term through 2008)		
Freddy Huffman	330-535-8009	atmos@netzero.com
Trustee (term through 2009)		
Tom Mino	330-923-7704	tjmino@neo.rr.com
Trustee (term through 2010)		
Ray Hyer	330-784-3970	rhyer@neo.rr.com
Statutory Agent		
Mark Kochheiser	330-882-3713	mkochheiser@neo.rr.com
OTAA Representative		
Lou Poda		

Activities Calendar

Club	Celestial
July 14, Open House and Star Party 9:00 pm	July 14, New Moon
July 22, ACA Member Picnic 2:00 pm	July 29, Full Moon
Aug. 4, Open House and Star Party 8:30 pm	August 12, New Moon
Aug. 18, Open House and Star Party 8:30 pm	August 12-13, Perseid Meteor Shower
Sept. 1, Open House and Star Party 8:00 pm	

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: Justin Phillips 402 Crystal St. Akron Ohio
email phillipsaca@gmail.com

OBSERVATORY REPORT

Ron Kalinoski

The planets have been putting on a beautiful display over the past few months. Unfortunately, our Planet Parade star party was cancelled due to poor weather. However, we had three good star parties since then. No clouds were present for our June 9th star party. Gregg Crenshaw started off the star party with a presentation on Venus and Mercury. Gregg's slideshow contained computer generated images of the surface of Venus and detailed photographs of Mercury's surface taken by spacecraft flybys. The 14" telescope was able to capture Mercury for the attending public. Mercury presented itself as a thin crescent against the blue sky. Venus reached greatest elongation on the 9th and looked like a brilliant gem more than a third the way up the western sky. In the telescope, Venus looked like a smaller version of the first quarter Moon. Saturn and Jupiter also entertained the public, being sighted in many of the members' telescopes.

We held our Solar, Lunar, Hot Dog Event on June 23rd. Clouds made solar viewing impossible. That was okay, we enjoyed good food cooked by Chef Huffman. Astronomer, Maintenance Coordinator, and Chef, Fred does it all! As the sun set, clouds started to thin. We pointed the 14" telescope at the Moon. No detail could be seen due to the continued cloud cover. Amazingly, one of our new members, Alex, an eight year old young lady, was able to extract detail on the Moon nobody else could see. Alex counted 33 craters and eight mountain ranges Later Alex instructed the observatory director to point the telescope to the southeast to view a double star. After getting things under control in the observatory, Alex picked up a chocolate chip cookie and headed out to see what the members were observing. First stop, Fred Huffman's 80mm refractor. Fred was changing the eyepiece at the time, searching for another eyepiece in the back of his truck. Alex wanted to try viewing the Heavens without an eyepiece inserted into the diagonal. She probably didn't see much, but managed to drop cookie crumbs onto the diagonal mirror. Oh well, if Fred cleans as well as he cooks, the 80mm refractor should be ready for the next star party.

On June 30th, Venus and Saturn were at conjunction. The two planets looked beautiful to the naked eye at sunset. Through a C5 using a 32mm superwide eyepiece, they looked spectacular. The distance between the planets was half the field of view. That works out to a separation of 52 arc minutes. Closest approach per **Sky and Telescope** was 40 arc minutes.

On July 7th, ACA held another star party. Dave Jessie gave a presentation on Asteroids, entertaining about 20 public attendees and 15 club members. Dave informed the audience asteroid Vesta has an orbital period of about three years and is currently closest to us and therefore at its brightest. One of the first objects we viewed through the 14" telescope was asteroid Vesta shining at magnitude 6.2. It appeared as a bright starlike object. Marty Breyer gave the observing audience a special treat. Marty brought his Narrow Pass Band filter coupled to a Russian 25mm eyepiece. This combination matched with Fred Huffman's 12 inch Dobsonian produced astonishing results. The Lagoon Nebula, M8, looked outstanding with the dark rift running across its face showing detail only seen in photographs. Marty's eyepiece and NPB filter showed similar results with the 14" telescope; however, the longer focal length produced too much magnification. Fred's 12 inch Dobsonian set the Lagoon Nebula and neighboring open cluster perfectly in the eyepiece field of view; both objects viewed comfortably and situated in a rich star field.

Treasurer's Report: 6/1/07 - 6/30/07

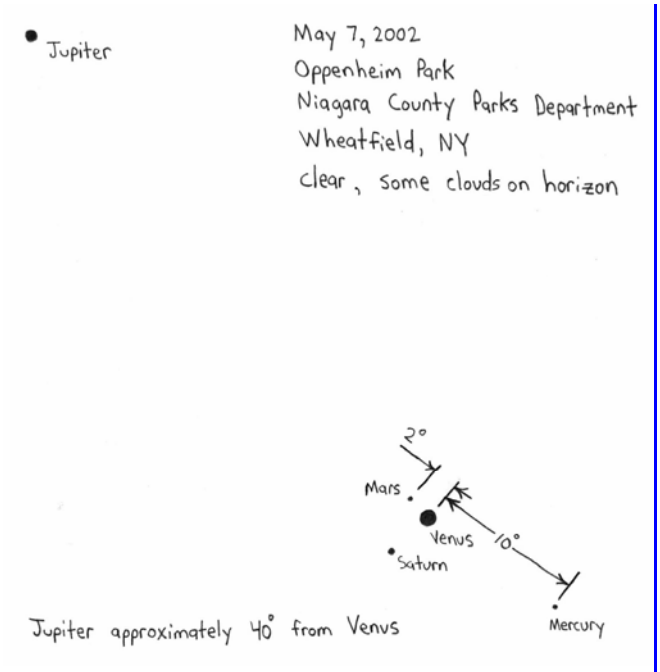
Steve Rohweder, Treasurer

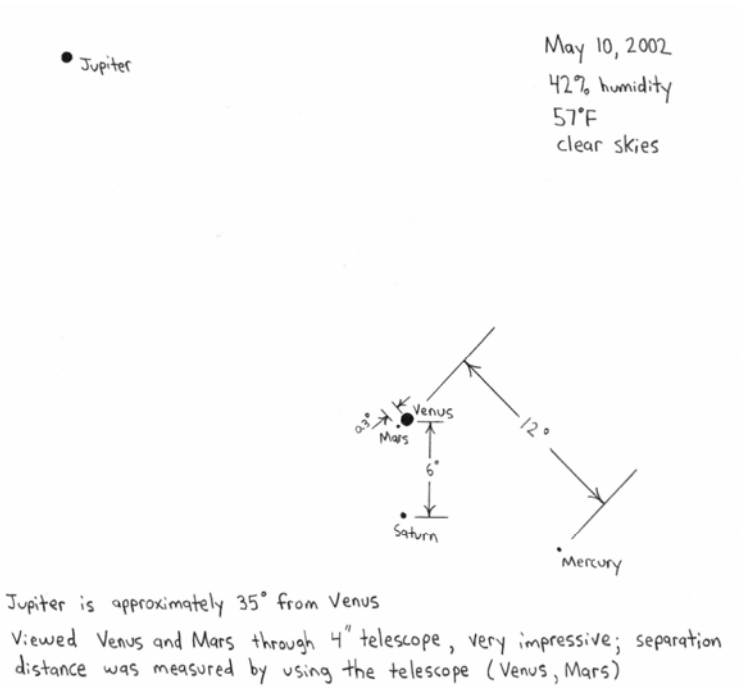
Total Beginning Assets	$8,262.82
Income	
Interest on balances	$1.93
Magazine Subscriptions	$34.00
Other Income	$80.00
Dues	$505.00
Expenses	
Observatory Upkeep	($93.73)
Magazine Subscriptions	($100.95)
Food	($108.99)
Total Ending Assets	$8,580.08

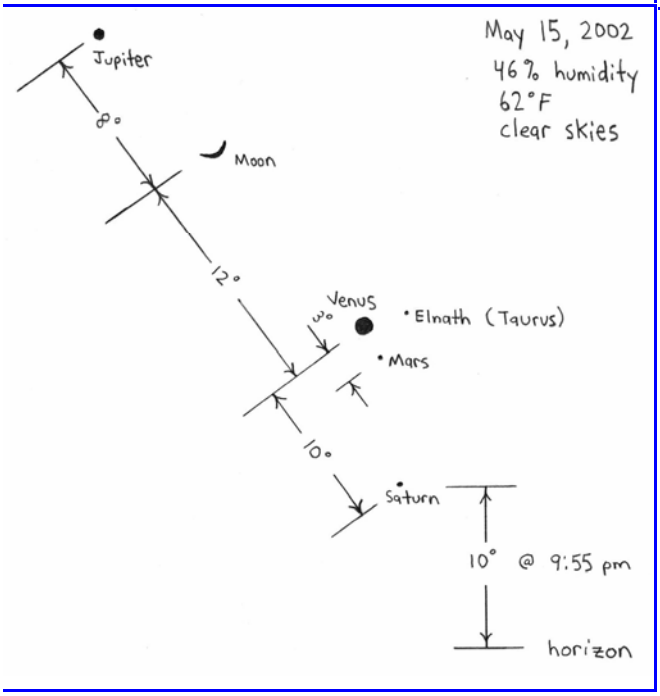
(Continued from page 1)

formation from conventional red, green, and blue filtered frames. Another is to use an Ha frame as the red frame and add green and blue images to it to generate a true color image. Another is to use Ha (red) and OIII (green) frames and to synthesize a blue frame, then combine them. The easiest way is to create a narrowband Ha image, render it correctly in red, and artificially color the stars white. Star colors are obviously lost, but the image looks nearly correct – red nebulae are red, as they should be.

Examples can be seen on page 1– the Bubble Nebula shot uses an Ha frame for red and then adds blue and green frames to it. The Crescent nebula image is in Ha only. The image was correctly rendered in red, then the stars were falsely colored as white.







2002 Planet Parade
During the month of May 2002, five planets put on an exhibition on a grand scale in the western sky. On May 10th, Mars and Venus were separated by 3/10 of one degree. Days later the moon entered the parade.

Drawings by Ron Kalinoski

2007 ACA Members Picnic

Members, let's have a good time at the ACA members picnic, which is coming up this July 22. Please be sure to bring a culinary dish to share.

If your last name begins with the letters A through M, please bring a side dish (such as fruit, potato, pasta, or bean salad; coleslaw, veggies and dip, fried chicken, etc.)

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If your last name begins with the letters N through Z, bring desserts or snacks (for example; pie, cookie, cake, etc.)

If you have any question please contact
Vic Saker (home) - 330-896-2407
Vic Saker (cell) - 330-328-3330
Rosaelena Villaseñor - 330-688-9043

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

Heather & Mike Wade
Christina Marek

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

Eyepieces for Sale

30-mm Orion Ultrascopic
9.5-mm Orion Lanthanum
Orion 13%-Transmission moon filter

Asking $50/eyepiece, and $10 for the moon filter. Contact Phil Creed at (330)472-2103 or e-mail at pcreed4863@hotmail.com

Photograph of Venus by Jason Shinn

Group photo from the June 23 star party, illuminated mostly by night vision friendly red light.

Photo by Jason Shinn

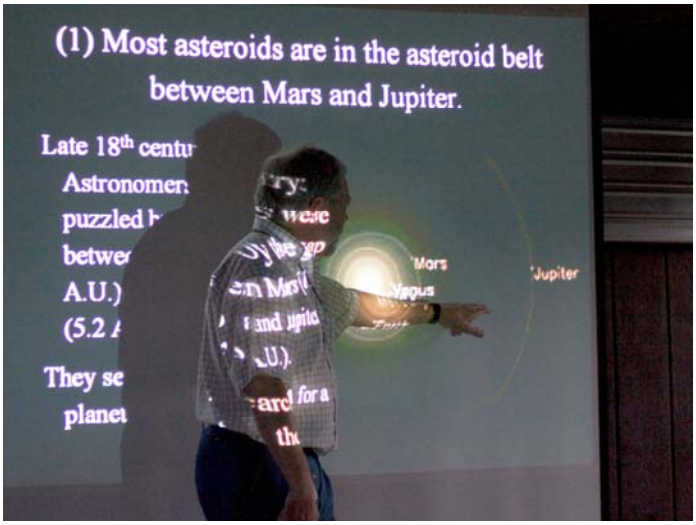
Astronomy Events in July/August:

OTAA Event: CAA (Cuyahoga Astronomical Association) - Saturday July 14, 2007 - at Letha House

Currently Showing at the Hoover-Price Planetarium: *Eclipse!*—July 14th thru September 16th—Saturdays at 1pm, Sundays at 2pm
http://www.mckinleymuseum.org/hoover_price_planetarium

NASA Glenn Third Saturday Series Event: *Space Rovers.* Learn about the use of wheeled vehicles in the exploration of the solar system and tour a rover test facility. July 21, 2007 at NASA Glenn Research Center
http://www.nasa.gov/centers/glenn/home/index.html

OTAA Event: MVAS (Mahoning Valley Astronomical Society) - Saturday Aug 11, 2007 - at the Cortese Observatory



Photograph of Dave Jessie presenting a slideshow about asteroids at the July 7 star party.

Photo by Justin Phillips

ASTRO GARAGE SALE

The following items are surplus to my needs and are being offered for local sale:

6" F/8 Meade AR-6 achromatic refractor on LXD55 computerized German EQ mount. The optical tube has been painted black but all is otherwise in normal used condition. All standard accessories included (tripod, finderscope, counterweights, Autostar control unit, etc.) plus upgraded 2" diagonal. The current model sells for $1200; it has a better tripod but everything else is pretty much the same. This one can be had for $800 complete.

8" F/10 Celestron SCT (model SPC-8) on enhanced (Autostar goto operation added) Meade LXD500 mount. Optical tube has some paint overspray on the rear casting - clean it up yourself and save a few bucks. Everything's there (including optical tube, mount, finderscope, Autostar controller and upgraded 2" diagonal) and everything works. This one will go for $800 also (cheaper mount but more expensive optical tube).

7" F/15 Meade Maksutov-Cassegrain optical tube. This OTA is no longer available from Meade but was known as a planet killer in its day. This is an older version with EMC multicoatings and has the internal counterweight Meade added to the forkmounted versions - but there's no forkmount with it. It does have a Losmandy dovetail plate on the bottom so it'll drop right onto your Losmandy-compatible mount. Includes finderscope and upgraded 2" diagonal. There's a motorized Moonlight Crayford focuser available as an added extra if you want it. The OTA and normal accessories plus dovetail plate will go for $900. The motorized Moonlight sells for $385. This one can be had for $300 but only with purchase of the Meade Mak.

John Crilly
jcrilly@neo.rr.com

The Night Sky
Newsletter of the Astronomy Club of Akron
c/o Justin Phillips, Editor
402 Crystal St
Akron, OH 44305-3116

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 Steve Rohweder, Treasurer
3981 Meadow Wood Ln
Uniontown, OH 44685-7785

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
ADDITIONAL ADULT member $15.00
JUNIOR (ages 12 to 17).....$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.

HIDDEN HOLLOW 2007

OCTOBER 13-14, 2007

OCTOBER 13-14, 2007

Door prizes include a 10 inch Dob!

- Good company!
- The 31" Rupp Telescope!
- Door prizes!
- Great speakers!
- Great demonstrations!
- Awesome skies!
- Free Cabins!
- Showers!
- Food!
- Vendors!

Pre-register and be eligable for the free solar filter workshop!

GUEST SPEAKERS

Phil Harrington - Author
Brent Archinal - USGS
Terry Mann - Astronomical League
Mike Best - Noted Amateur and Public Speaker
Tom Whiting - "The man with the 30 inch Dob!"
Jason Shinn - Canal Fulton Amateur Radio Observatory

FOR MORE INFORMATION VISIT
http://www.wro.org/hiddenhollow07.html

Richland Astronomical Society
The Warren Rupp Observatory

Hidden Hollow ’07 mail in registration form:

Adult registrations include one door prize ticket per registrant, which will be given at check-in. Additional door prize tickets may be purchased at the event.

1. **For safety of all attendees, use of GREEN LASER POINTERS ARE PROHIBITED.**
2. **You must provide an email address (print clearly!) if you want a confirmation.**
3. **Registration through October 1, 2007 or until we receive 350 registrations. Fire code regulations**
4. **No cars will be permitted to enter the Star Party area after dark and no cars are permitted to move on the field after dark except in an emergency.**
5. **Pre-registration is MANDATORY; there will be NO REGISTRATIONS at the gate.**
6. **Pets are not permitted Service animals for disabled are permitted.**
7. **Individuals using this form to register are not allowed to sell items, you must register as a vendor to sell. Contact RAS if you wish to register as a vendor.**
8. **Not responsible for theft or accidents; No refunds.**
9. **Very Rustic bunk house style cabins first come, first served; bring your own sleeping bags “consider these as wooden tents”. No heat, 200 maximum.**
10. **Wrist bands are mandatory**

Please indicate your selections by placing a number in the appropriate box. If multiple people are applying from different postal addresses, please use a separate form for each address.

Number of Adult registrations @ $40 each _____

Number of Family registrants @ $60 each _____ immediate family only no extended family members at this rate.

Number of Children under 12 (must be accompanied by an adult) **free** _____

Name(s):
Name(s):
Street Address:
Street Address:
City, State Zip Code:
Telephone Number:
Email address (print clearly this is what we use to contact you!!)
Bringing Telescope? Type
Club affiliation
Using Bunk House Cabins Yes No
SIGN AT X BELOW TO AGREE TO THE REGISTRATION PAPER
X

Please print and send page along with your check (made payable to "R.A.S.") to:

Richland Astronomical Society P.O. Box 1118 Mansfield Ohio 44901

You will receive a confirmation email from kmoore10@columbus.rr.com after your registration has been received.

Not responsible for misspelled, non-functioning, or blocked email accounts this is beyond our control.

Submit email questions about your already submitted registration form to kmoore10@columbus.rr.com, hhreg@earthlink.net all other questions should be directed to theastronomer@webtv.net