



★ STAR STUFF ★

The Newsletter of the Ford Amateur Astronomy Club

June 2003
Volume 12 Number 6



Editor: Jim Frisbie

A MESSAGE FROM THE PRESIDENT

What an interesting spring we have had so far. It started off with clouds and snow and continues with clouds and rain. Despite all this I made the best of it by learning how to use an auto guider. For those not familiar with one, it's a device that is used to keep the telescope tracking precisely with Earth's rotation during an imaging session. This enables one to image celestial objects without getting football shape stars. Traditionally people who have done film photography would mount their camera to an Off Axis Guider (OAG). The guider is setup so that as light exists the telescope and splits into two paths, one for the camera and another for the guider. A small mirror or prism is generally used to pick off a small portion of the light cone's edge to send it to a guide port, sort of like a periscope. The guide port is setup for high power illuminated reticle that has back lighted cross markings. When one sets up their camera to take a picture they also have a star placed in the center of the cross markings. All throughout the exposure one must make frequent adjustments in the telescope's motion controls to keep the star fixed on the cross markings. This doesn't sound too bad until you do it for extended periods of time on a cold winters night.

With the advent of CCD cameras, things have improved. Today one can buy an auto guider that hooks up to the OAG in the same port you would place an illuminate reticle. The mechanics of an auto guider is the same as manual guiding except the device does all the work. Once the auto guider locks on to a star, it controls the telescope to keep the star at a fixed position on its CCD chip. If the telescope drifts to the right the guider tells the telescope to move left in the same amount. Sounds pretty cool and easy, right? Well there is bit more to it than this. First, you have to locate a star around the object you want to image. Second, the star must be bright enough for the auto guider to see it. Generally speaking, you want the auto guider to make frequent corrections in the telescope's movement. This means the auto guider will be taking exposures of a few seconds or less. Third, the auto guider must be positioned so that it can see the star. This becomes a bit of a challenge if you find that you have to rotate the OAG about the telescope's centerline to get the star in view; remember an OAG is seeing only a portion of the light cone's edge. For example, is the telescope was pointed at a clock's center then the OAG would only see the clock's numbers. If you want to guide on a star in the 3 o'clock position you must rotate it to that position. The forth step is the have the auto guider setup so that it knows how fast your telescope moves in right ascension and declination; otherwise known as calibration. The last step is to sit back in your lounge chair and let the auto guider do its job.

I really wish it were as easy as it sounds. The digital camera I purchased included an OAG and an auto guider. This auto guider I found to be difficult to work with since it does not provide an image of the guide star. The problem is you don't know if you are at peak focus or have the star properly aligned on the auto guider's CCD chip. I expressed this problem to Jeff Thrush, whom I've been consulting with on much of my imaging questions. He suggested that I use a Cookbook camera. I have heard about the camera but have never seen one nor knew of anyone that had one. Well, Jeff knows them very well since he built quite a few for himself and friends. Jeff had one available that he was trying to sell and highly recommended that I get it. The camera, which is one you build yourself, has a few parts that needed to be soldered to the circuit board. But all in all it is in perfect order. One of the main benefits to this camera is that it can image and guide at the same time. Perfect! Now I feel confident that I can set the auto guider up quickly and correctly and enjoy an evening's worth of imaging. I can't wait for clear skies.

I cannot tell you how much help FAAC members have provided me over the years. It is great to know that people want to share their personal learning experiences with me. I don't always experience this in everyday life. I encourage everyone to take advantage of the great resources that FAAC members provide. You never know what you will learn and what new friendships you will develop. Thanks again Jeff for all your help!

Don Nakic

JUNE 2003 STAR STUFF

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STAR STUFF is a monthly publication of the Ford Amateur Astronomy Club, an affiliate club of the Ford Employee Recreation Association.

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Submissions to STAR STUFF are welcome Please write to the address above or contact the editor:

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Dead line is the 15th of each month of publication.

Officers:

President	Don Nakic
Vice President	Dale Ochalek
Secretary	Don Klaser
Treasurer	Gordon Hansen

General Meetings:

The Ford Amateur Astronomy Club holds regular general meeting on the fourth Thursday of each month (except the combined November/December meeting held the first Thursday of December) at 5:00 PM at the Ford Motor Credit Building off Mercury Drive near Michigan Ave. in Dearborn.

Observing:

The Ford Amateur Astronomy Club observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains a permit for after-hours access. Weather permitting, the club observes on Friday nights, Saturday nights, and nights before holidays.

Club Information:

Observing schedules and additional Club information is available by calling the Observing Hotline at: (313) 390-5456 or via the Ford Intranet: www.be.ford.com/astro/faac.html or the public Internet: www.boonhill.net/faac.

Club Membership:

Membership in the Ford Amateur Astronomy Club is open to Ford employees and non-employees. Write or call for an application.
Annual - New Member: \$25; Renewal: \$ 20 (before Jan 31 of each year)
Lifetime - \$ 150

Membership includes:

A subscription to the STAR STUFF newsletter and the quarterly newsletter the REFLECTOR published by the Astronomical League.
Discounts on ASTRONOMY and SKY & TELESCOPE magazines, after-hours access to the observing site and discounts at selected area equipment retailers.

Magazine Discounts:

Do not send money to FAAC for SKY & TELESCOPE or ASTRONOMY magazine subscriptions. We have a form that you send in with your subscription directly to the publisher to receive a \$10 discount. Pick up a form at the next meeting, or contact a club officer.

FOR SALE: Celestron C102 Refractor (~4-inch). ~1987-88 vintage. Like new condition. Rarely used. Optics are clean. Very Sharp images. Asking \$800 OBO.
Coulter Optical 13.1" Dobsonian reflector. 1984 vintage. Original blue sonutube and particle board rocker box. Very stable and easy to use (with a telrad and spotting scope). Optics are still good. Telescope is very stable for viewing DSOs. One of the first "light buckets". Asking \$400. Contact Greg Miller by email: gmille17@ford.com

FOR SALE: Meade 8" SCT excellent condition
Now you can reach out for detailed observation of the solar system, as well as the deep space. Prepare to be amazed, gathers 73% more light than a 6". You won't have to call it a night after you've observed the Messier Catalog. Comes complete with HD steel tripod, 15mm ep, 6x30 finder & telrad. \$875.00 1-734-722-3959 ask for Michael

**MINUTES OF THE MAY 22, 2003
FAAC GENERAL MEMBERSHIP MEETING
By Don Klaser**

The meeting was called to order by President Don @ 5:00 p.m. He reviewed the setup we are starting tonight for donations and fund raising as they pertain to the Scholarship Fund and the Equipment fund. Several members spoke about their observing experiences over the last month will the pizza & pop were enjoyed. Gordon Hansen gave the Treasurer's report; he also reported on fund raising opportunities available to us through FERA. Don Klaser gave the Secretaries report. George Korody talked about the upcoming combination lock number change at Island Lake starting June 1. Gordon Hansen reported that the three Scholarship Award recipients will be presented with their awards at next month's general meeting. Next month's Astro-Imaging SIG will be held at the Ford Family Learning Center on Rotunda Dr. @ 5:00 p.m. on Tuesday, June 10. Upcoming events were reviewed and discussed. Greg Burnett gave the technical discussion on satellite orbits. George Korody brought in a program he recorded off the History Channel about observatories. The main program was presented by John Schroer on homemade telescopes. The meeting was adjourned at 6:45 p.m.

TREASURER'S REPORT – 5/22/2003

By Gordon Hansen

Bank Accounts

Checking	\$	851.18
Savings	\$	635.61

TOTAL Bank Accounts	\$	1,486.79
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Cash Accounts

Cash Account	\$	165.93
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TOTAL Cash Accounts	\$	165.93
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Asset Accounts

Books	\$	-
GLAAC	\$	319.00
Projector	\$	62.70
Scholarship	\$	865.13

TOTAL Asset Accounts	\$	1,246.83
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OVERALL TOTAL	\$	2,899.55
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MONSTER TRUCKS ON MARS

by Patrick L. Barry and Dr. Tony Phillips

We all know what Mars rovers look like now: Robotic platforms, bristling with scientific instruments, trundling along on small metallic wheels. Planetary rovers of the future, however, might look a little different-like miniature monster trucks!

Enormous, inflatable tires can easily roll right over the rocks and rugged terrain of alien planets, just as they bound over old cars like as many speed bumps.

That's the idea behind a novel concept for robotic planetary rovers known as the "big wheels inflatable rover." Unlike rovers similar to the Sojourner robot that explored the surface of Mars in 1997 that depend on instructions sent from Earth or complex programmed intelligence to steer through rough terrain, this rover has three beach ball-like tires roughly five feet across that make it a true off-road vehicle.

"We sent this rover out to Death Valley, to a place called Mars Hill that has a general geological formation like Mars, and nothing could stop it," says Jack Jones, the mastermind of the inflatable

rover concept at JPL. "It just kept going and going and going."

Lots of current research is devoted to developing advanced robotic intelligence that allows rovers to detect rocks in their path and maneuver around them. The alternative to such on-the-spot intelligence is tedium: Ground controllers on Earth working out the maneuvers by hand and waiting an hour or more for the instructions to travel to the distant planet.

A "big wheels" rover would need such computer intelligence to avoid very large boulders, but Jones asks, "Why worry about every little rock, pebble, and crack when you can just roll right over most of them?"

Jones imagines a scenario where multiple inflatable-wheel rovers could be sent out to explore the Martian terrain-easily and quickly traversing the rugged terrain. Samples gathered by the rovers could be returned to a central, stationary laboratory module for detailed analysis.

"The Martian surface is really very, very rough with a lot of rocks, and to be banging this laboratory equipment up and down over all of these rocks aboard the rovers doesn't make much sense," Jones says. "I suspect it might be better to leave it in a central location."

At the moment it's all very speculative; NASA currently has no definite plans to send inflatable rovers to Mars. But who knows, one day monster truck-like vehicles could be zipping over Mars' rough, red surface.

Kids can baffle their friends with a robot puzzle (including a "Big Wheels" rover) they make themselves at http://spaceplace.nasa.gov/robots/robot_puzzle.htm . For adults, find out more about NASA's inflatable rover program at http://www.jpl.nasa.gov/adv_tech/rovers/summary.htm .

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



The "Big Wheels" inflatable rover doesn't mind a few boulder-sized rocks, no matter what planet they're on!

KEEPING FOCUSED

By: Jeff Thrush

In the late 90's I started the planning and construction of my observatory. It houses a Schmidt-Cassegrain telescope that is controlled from a remote observing room. After the installation of the telescope and dome controls, I quickly discovered the need for some method of focusing my telescope remotely. To solve this problem, I purchased the JMI NGF-S focuser and Digital Read Out (DRO) hand paddle. This solved my remote focus problem. I finally had a way to focus my telescope without having to run between the control room and the telescope.

Enter my next problem.

I found myself spending 5 -10 minutes before each imaging session trying to focus my camera. Focusing a CCD camera is one of the most difficult tasks you will encounter when imaging. To capture the fine detail in an object, you need to obtain the most precise focus possible. When focusing, the human eye can compensate for slight focus variations. The CCD chip is unforgiving and cannot compensate for small variations in focus. Because of this compensation, the fine detail in many CCD images can be lost before the camera starts integrating.

Some telescope designs are easier to focus than others. Newtonians and Cassegrain telescopes have secondary mirror supports that can be used to create diffraction spikes upon which a CCD camera can be focused. Refractors and Schmidt-Cassegrain telescopes do not have these secondary supports and are therefore more difficult to focus. To help reduce the time I spent focusing my SCT's, I purchased the Aquest FocusAide / PCFocus software package. The Aquest focusing system comes standard with the PCFocus software, control unit, cable and manuals. The FocusAide software add-on can be purchased at an addition cost.

PCFocus provides a control unit and software used to control motorized focusers with a personal computer, either locally or remotely. The software is available as a standalone application and comes with a plug-in for the AstroArt software. The PCFocus hardware control unit uses a serial port that interfaces it to a PC computer and can "share" this port with other devices and software.

The companion product called **FocusAide** uses the PCFocus technology for JMI focusers or can be operated in a standalone fashion for Optec, RoboFocus, and Van Slyke focusers to provide a complete focusing system. FocusAide integrates the computer, motorized focuser, and CCD camera to provide full focus control including focus scanning. You can also add an automatic temperature compensation board that will make automatic focus changes as air temperature changes throughout the night.

Most popular CCD cameras are supported with a series of "camera plug-ins". Various focus quality metrics are user selectable including FWHM, Peak Value, and Half-Flux Diameter. The following CCD cameras are compatible with this focus system:

- **SBIG ST2000XM, ST237, ST237A, ST7, ST8, ST9,**

ST10

- **All Starlight Xpress USB and Parallel Port Cameras (except HX516)**
- **Plug-ins for other cameras will be provided depending on customer demand**

Over the past several months, I have run various tests and have been very happy with the results. The control unit and software works extremely well. I use this focuser mainly with my MX916 on a Meade 10" LX200 f/10 SCT working at f/6.3. With this configuration, I routinely achieve FWHM's of less than 2.0 and it is all done automatically in a matter of 2 minutes time or less. List below are some facts you need to be aware of:

Under Win95/98/Me FocusAide is compatible with all Starlight Xpress USB and Fast Interface parallel cameras

Under Win2000 and WinXP for all Starlight cameras with USB interfaces (including HX916)

SBIG cameras are supported under all Windows versions

Using this equipment I can make extremely small incremental focus adjustments. The actual increment of the focus adjustment is dependent upon the encoders used in the focuser. When using my NGFS, each one of the 540 steps is approximately 0.0005 of an inch or 0.01mm per step.

If anyone is looking for an easy way to focus your CCD cameras, I highly recommend this product. It will definitely allow you to be more productive while imaging.

CAMERAS CAPTURE A 5-SECOND FIREBALL AND ITS METEORITE'S SECRETS

Submitted by Greg Burnett

By HENRY FOUNTAIN, New York Times

With meteorites, as with fine art, provenance counts for a lot. But much more is known about a van Gogh or a Picasso, say, than about most meteorites.

They come from space, sure, but beyond that little is certain.

Now, however, a meteorite has been found in southern Germany, and a precise orbit has been determined for it. The four-pound rock, named the Neuschwanstein for the Bavarian castle near where it was found in July, is a remnant of a five-second fireball captured on film three months earlier by a network of tracking cameras in Central Europe.

This is the fourth time in more than 40 years that a meteorite has been found after such cameras had photographed its fireball, said Dr. Pavel Spurny, the coordinator of the European Fireball Network and an astronomer at the Astronomical Institute of the Academy of Sciences of the Czech Republic. What is even more remarkable, Dr. Spurny said, is that the orbit of this rock matches that of the first meteorite discovered in this way, in 1959.

"The most unique fact is that two of these have the same orbit," Dr. Spurny said.

It is not just coincidence, he added. The two are no doubt part of a stream of rocks, probably fragments of one parent asteroid in an elliptical orbit around the Sun that extends nearly to Jupiter.

The Neuschwanstein fireball was photographed by 10 of his network's 30 stations in Austria, the Czech Republic, Germany and Slovakia. Each station has a fixed camera with a very wide-angle lens and a rotating shutter that enables the velocity of the meteor to be determined at various points as it streaks across the sky. Taking the seven best images, Dr. Spurny and others used simple triangulation to calculate the trajectory.

They determined that the meteor first appeared at an altitude of 275,000 feet northeast of Innsbruck, Austria, entering the atmosphere at an angle of almost 50 degrees, and traveled 50 miles northwest, disappearing at 52,000 feet. Its initial speed was 13 miles a second, slowing to 1 1/2 miles a second. Their findings are reported in the current issue of Nature.

With this information, the researchers determined that the meteor had an initial mass of 650 pounds and calculated the trajectory of the "dark flight" of the estimated 30 pounds of rock that remained after the fireball had burned out. The meteorite was found was a few hundred yards from the predicted impact area, and scientists assume other fragments are in the general area.

Jack Drummond, a scientist at the Air Force's Starfire Optical Range at Kirtland Air Force Base in Albuquerque, said the Neuschwanstein find was a rare high point in observing fireballs.

"For 45 years or so, networks have been trying to do this," Mr. Drummond said. While they have tracked plenty of fireballs - the European network records 40 to 50 a year - the goal of finding related meteorites has been elusive, and two North American networks have been disbanded for lack of financing.

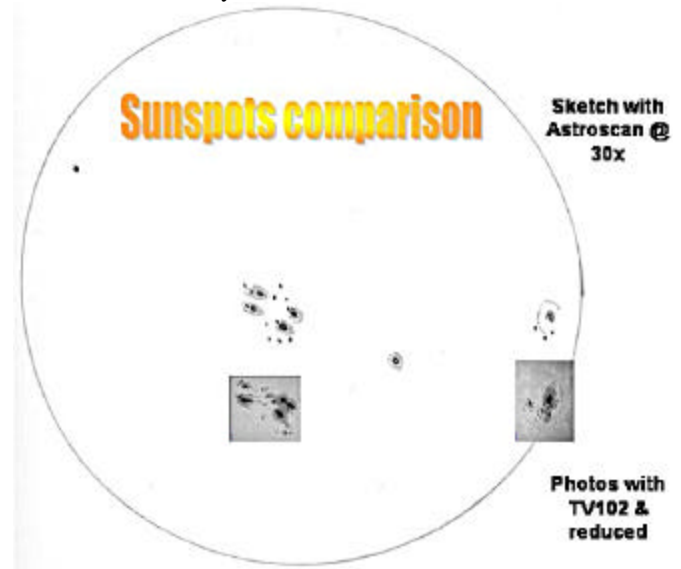
"It's been very disappointing," he said.

MORE ON SKETCHING

By Gary Strumolo

I thought I'd share a sketch of sunspots as a change of pace from only nighttime objects. I made this using my Astroscan and a 15mm Plossl, yielding 30x. I also use a full aperture glass solar filter from Orion of course. This retains the yellow color of the sun, unlike mylar film filters that give a white or blue tint. The advantage of sketching the sun is that you can do it during the day (no flashlight with the sketchpad) and it, like Jupiter, always changes with spot patterns moving across the surface each day so it presents something new each time you view.

The sketch_photo is interesting. It the same sketch as before, but I obtained some photos from the TeleVue site taken by someone (Gu Yu) with his TV 102. It was done on the same day but I think about 19 hours later than when I was observing. I shrunk them down and rotated them to mimic my view and placed them below for comparison. Not bad for an Astroscan and an eye!



EQUIPMENT REVIEW: CELESTRON / BAADER CONTRAST-BOOSTER FILTER

By Jim Frisbie

Background: Over the last 3 years I have been buying, evaluating, and selling economy achromatic refractors. I have been doing this for many reasons, most importantly; I wanted to learn about telescope optics and mechanics. Why economy refractors you ask. Because I am of Scottish decent, I am hard pressed to spend the extra \$ (ten fold) to purchase a quality apochromatic refractor.

To date I have purchased 5 achromatic refractors and sold 3. They have ranged in size from 80mm, f/5, and 16" long to 150mm, f/8, 60" long. Most were Chinese vintage and more

recently, Japanese. The quality of my achromats has ranged from poor to outstanding.

In my quest, I have learned about: collimation, chromatic aberration, spherical aberration, coma, pinched optics, star testing, blacking inside OTA's, aperture masks...and the list goes on. My education has been well worth the investment. Of all things that I have attempted to improve achromatic refractor performance, aperture masks have been most effective. But aperture masks have a severe downside in the cost of optical resolution and light gathering capability.

I have also tried minus violet filters. Did they work? Yes. Did I keep them? No. Why? They just didn't seem to work well enough!

Yes, Chromacor optics do work, but they must be matched to the optics of your specific objective lens. Depending on the scope, the cost of the refractor, Chromacor, and matching service quickly approaches the cost of a decent used apo refractor.

In my opinion, what all this adds up to is, either put up with the chromatic aberration from a quality achromatic refractor or spend the money for an apo.

UNTIL NOW ANYWAY!!!

Recently, John Kirchhoff, from Riders Hobby in Livonia, asked me to evaluate a new product from Celestron called the Baader Contrast-Booster Filter. Most people will recognize the Baader name associated with Solar Film.

Description: The filter is multi-coated glass, mounted in a machined, ribbed, black anodized, aluminum housing threaded for attachment to a standard 1 1/4" eyepiece. The filter appears to have a light violet tint. When held up to daylight, the filter gives a greenish cast. The filter is packaged in a plastic container with polyethylene foam cushioning. A specification sheet is also included describing properties and a graph of the transmission curve. These are packed in a white setup carton labeled

CELESTRON
BAADER Contrast-Booster Filter 1 1/4"
#94121

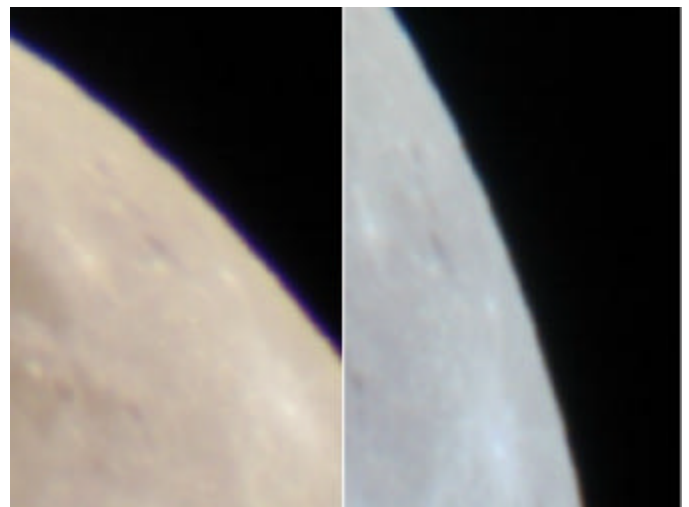
Testing: I have included images with and without the Baader filter so you can form your own opinion.



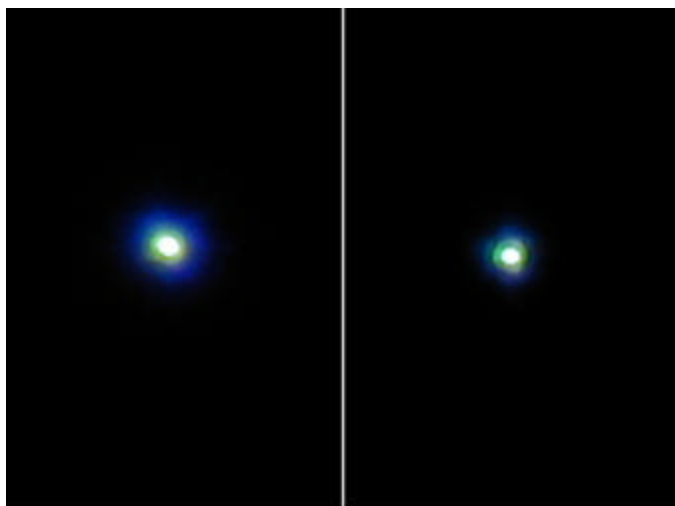
1) Celestron, ST-80, with a 12.5mm U.O. Orth, at 32X.



2) Celestron/Vixen, C-102, with a 7mm Nagler, at 143X.



3) Celestron/Vixen, C-102, with a 12.5mm U.O. Orth, 80X.



Vega, The Acid Test!

4) Celestron/Vixen, C-102, 7mm Nagler, at 143X

- Notes:
- 1) All pictures were taken with a Nikon Coolpix 950 afocally.
 - 2) No processing has been used with the exception of cropping and resizing.
 - 3) In each picture the image taken through the Celestron / Baader Contrast Booster filter is on the right.
 - 4) For snail-mail readers, color images are available on-line via the FAAC homepage.
 - 5) Equipment used is listed under each image.

How Does It Work: Violet light has a wavelength that varies from 360 to 440 nanometers (nm). The Celestron / Baader Contrast-Booster filter has transmission curve that cuts off very sharply below 480 nm. This rejects transmission of virtually all violet light.

Pros: The filter is AWESOME! The violet fringing from bright objects in my achromatic refractors is virtually gone! The filter works equally as well on short tube f/5's and long tube f/10's. It works well at low and higher powers. With the violet fringe removed contrast is improved making focusing much easier.

Cons: Yes there are a couple of down sides to the filter. A) There is a greenish cast most noticeable during daylight use. As you can see, the greenish cast has not shown up in my images. It is noticeable by eye. B) Like most filters, there is some light loss. The loss is so small, I was unable to quantify it with my Nikon Coolpix 950 light meter. If I were going to guess, I would say the loss is less than 1/2 of an f/stop.

Conclusion: In my opinion, the Celestron/Baader Contrast-Booster Filter offers a very significant performance improvement for achromatic refractors. At \$39.95 for a 1 1/4" filter, how can you go wrong? The new filter has narrowed the performance gap between quality achromats and apo refractors and slowed my quest for an apo!

NEW FOR YOU - VIDEO LENDING LIBRARY

By Nancy Leon

Many clubs would like to be able to have access to NASA videos to use as part of the club monthly program. In order to support the clubs who carry our column, we are now offering a video lending library. A brief description of the videos JPL has to lend is available on-line. Your selection can also be made on-line, and the video will be mailed to you within 24 hours -- if we have it available at that time.

Please note that we have a limited number of each video -- they are for loan only. If they are not returned promptly, we will not be able to continue this service. (So, please resist the temptation to lend it to those who missed the meeting -- and just get it back to us so that others can borrow!)

Please contact me for the url.

IMPORTANT NOTICE -- GATE COMBINATION CHANGE

By George Korody

Please be advised that the combination number on the gate lock at our Island Lake State Recreation observing site has been changed effective June 1, 2003. The Park will be locking the gate at 10:00 PM. Under no circumstances is the combination number to not to be given to anyone who is not a confirmed member of the FAAC. This is for the benefit and protection of all Club Members, as well as the protection of park property. As in the past, it is important that immediately after use the key be returned to the lock box for use by other Club Members. The new number can be obtained from a Board Member or by leaving a message on the FAAC hotline at (313) 390-5456. Your membership will be confirmed and you will be notified of the new number by return phone call or E-mail.

LEARN IT ALL HERE:

By George Korody

Everything you wanted to know about seeing:
<http://homepage.ntlworld.com/dpeach78/seeing2002.htm>

Also, the link below is to the ALPO WEB site. This ALPO has nothing to do with dog food (G). It stands for Association of Lunar and Planetary Observers which is a huge organization with Donald Parker as Executive Director. A friend of mine, Bob Lunsford, is on the Staff there. You can spend days at this WEB site, learning all about our solar system and seeing a lot of excellent pictures. The link is:
<http://www.lpl.arizona.edu/alpo/>

BEGINNERS NIGHT – JUNE 7TH

By John Kirchoff

A BIG thanks to everyone that helped support our second Beginner's Night at Island Lake. I wish I could report that we had excellent skies all evening but at least it didn't rain and we did get a glimpse of the moon, Jupiter, and a few of the brighter deep sky targets. We estimated that there were approximately 15 scopes and 6 binoculars set up on the field as well as several instruments that stayed in the car. Attendance was 30+ with several soon to be club members present. Biggest scope on the field was a Celestron 14 CGE that offered some great views even with less than average weather ... maybe better than average this spring! Please mark your calendars for Saturday, July 5 and plan on attending our next Beginner's Night at Island Lake.

ASTRONOMICAL IMAGING S.I.G.

By George Korody

The next meeting of the Astronomical Imaging S.I.G. will be held at the Ford Family Service and Learning Center on Tuesday, July 8, from 5:00 to 7:00 PM. This is the same location as all previous meetings. The main topic at this meeting will be live video imaging. John Schroer will lead the presentation and discussion. Directions to the meeting place can be found at <http://www.boonhill.net/faac/newlocationmap.htm>.

The group meets once each month. Group members volunteer to prepare astronomical imaging related presentations and lead informal discussions at the meetings. All FAAC Club Members are welcome to join the S.I.G.. If you are not a member and would like to join, just come to the meeting.

June 26, 2003

General Membership Meeting

5:00 pm to 6:50 pm

Agenda

- Introductions	Don Nakic	20 min
- Reports: Treasurer's Secretary's	Gordon Hansen Don Klaser	5 min
- Old/New Business	Don Nakic	10 min
- Upcoming Events	Don Nakic	20 min
- Technical Discussion	TBD	15 min
- TBD	Don Nakic	5 min
- Basics of CCD Imaging	Jeff Thrush	35 min

ASTRONOMICAL CALENDAR

June 2003

All times are Eastern Standard Time or Eastern Daylight Saving Time, whichever applies.

June 21	Mercury near Venus – morning
June 21	Last Quarter moon 10:45 am
June 21	Solstice 3:10pm
June 28	Venus near crescent Moon – dawn
June 29	New Moon 2:39 pm

July 2003

July 2	Crescent Moon near Jupiter – dusk
July 4	Earth at Aphelion 2:00 am
July 6	First Quarter Moon 10:32 pm
July 8	Venus north of Saturn - dawn
July 10	Moon near bright star Antares – evening
July 13	Full Moon 3:21 pm (Thunder or Hay)
July 17	Moon very close to Mars – morning
July 20	Anniversary: 1st Manned Moon landing
July 21	Last Quarter Moon 3:01 am
July 29	New Moon 2:53 am
July 30	Crescent Moon near Jupiter - dusk

This information was obtained from the Henry J. Buhl, Jr. Planetarium in Pittsburg, PA.

FAAC CALENDAR

Activity	Date	Time
- General Meeting	Jun 26	5 pm
- Summer Solstice	Jun 27-29	
- FAAC Board Mtg	Jul 10	5 pm
- General Meeting	Jul 24	5 pm
- FAAC Board Mtg	Aug 14	5 pm
- General Meeting	Aug 28	5 pm
- GLACC	Sept 5,6	
- FAAC Board Mtg	Sep 11	5 pm
- General Meeting	Sep 25	5 pm
- Island Lake Star Party	Oct 4	
- FAAC Board Mtg	Oct 9	5 pm
- General Meeting	Oct 23	5 pm
- FAAC Board Mtg	Nov 13	5 pm
- General Meeting	Dec 4	5 pm

GENERAL INFORMATION

Location and dark sky are the main attractions of this star party. Gladwin's central location provides excellent observing without traveling hours into Northern Michigan. Limiting magnitudes are estimated to be around 6.5 at zenith with some minor light domes from the cities of Mt. Pleasant and Midland, some 30 miles away. This is a star party for the amateur astronomer who loves to observe and mingle with other amateurs. Some practical and interesting talks are scheduled to enhance your weekend experience.

STAR PARTY HIGHLIGHTS

Friday, September 26th:

5:30 – 6:30

- Registration begins

6:30 – 7:30

- Star Party Kickoff...
- Opening Comments

7:30 – 8:30

Astronomy Talk

- "Observing Challenge" - Tom Trussock
- "Astrophotography" - Clayton Kessler

8:30 – ???

Observing on the hill

- Welcome tent open all night
Free hot chocolate/ coffee
Pop and popcorn available
- Bring your scopes!

Saturday, September 27th:

11:00 – 1:00

- Swap meet on the hill
- Bring your old equipment

1:00 – 2:00

- Lunch on your own

2:00 – 3:00

- Solar Observing Presentation by T.B.A.

3:00 – 4:30

- "Build a Dob in an Hour"
Kevin Dehne & Kristen Rill

4:30 – 6:00

- Dinner on your own

6:00 – 8:00

Astronomy Talks

- "Equipment Talk" - Jason Blaschka
- "Lunar Observations" - Dick VanEffen
- "Double Stars" - Dale Penkala

8:00 – 8:30

- Door Prize Drawing

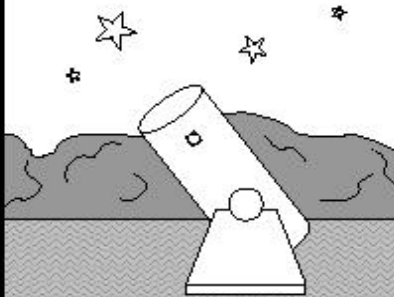
8:30 – ???

- Observing on the hill
- Welcome tent open all night
Free hot chocolate/ coffee
Pop and popcorn available
 - Bring your scopes!

Sunday, September 28th:

Departure by 12:00

The First Annual
**Great Lakes
Star Gaze**
"A star party with dark skies!"




September 26-28, 2003

Held under the dark skies of

**River Valley RV Park,
Gladwin, MI**

Sponsored by the
Sunset Astronomical Society



REGISTRATION FORM: Complete, detach and mail this registration form along with a check or money order.

Name: _____ Phone: _____ e-mail: _____ State: _____ Zip: _____
City: _____

Check appropriate box below and make check out to the "Sunset Astronomical Society".

Mail to: Joseph Brussow 2200 Nine Mile Rd. Kawkawin, MI 48631

- One Night Tent - \$10.00 individual (Friday, September 26th or Saturday, September 27th) \$17.00 per family
- Two Nights Tent - \$15.00 individual (Friday, September 26th and Saturday, September 27th) \$28.00 per family
- One Night (travel trailer) - \$5.00 + campground fees in RV park. (See other page)
- Two Nights (travel trailer) - \$10.00 + campground fees RV Park. (See other page)

Registration must be post-marked no later than August 31, 2003. Late registration (after 8/31/03) and "at the gate" is limited to space available and will cost an additional \$5.00 per night.

Great Lakes Star Gaze GETTING TO RIVER VALLEY RV PARK

From US-10

Travel 12 Mi. N. from Loomis Exit.

From US-27

Travel 6-1/2 Mi. E. from Lake George Exit.
From M-61 travel 2-1/2 Mi. S. on Bailey Lake Ave. (midway between Gladwin and Harrison).

WHAT IS INCLUDED WITH YOUR REGISTRATION:

- Registration of your family
- Tent camping on the observing hill for you and your family.
- Hot coffee/ chocolate in welcome tent
- 1 ticket for door prize raffle
- Hot shower/ clean restroom facilities

WHAT IS NOT INCLUDED WITH YOUR REGISTRATION:

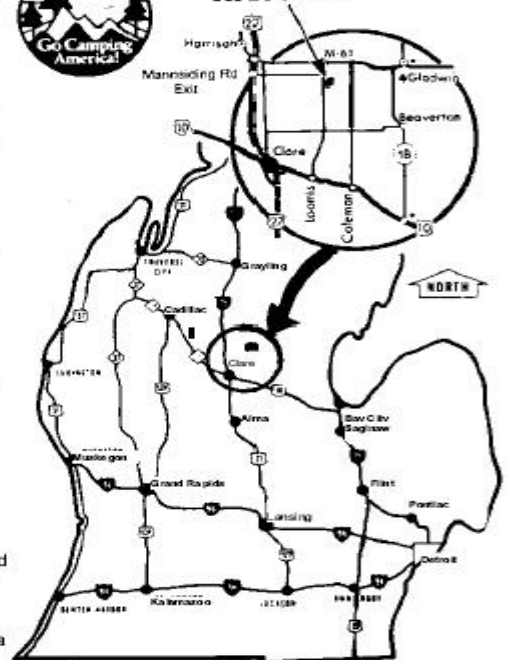
- Travel trailer site
- Full hook-up sites are available by contacting **River Valley RV Park at (989) 386-7844**; their website is <http://www.rivervalleyrv.com>
- Cost of full hook-up sites is an additional \$25-27 per night above and beyond the star party registration fees.

LATE REGISTRATION:

Registrations after 8/31/03 should include a \$5.00 late fee and are limited to available space. This includes registration at the gate



RIVER VALLEY R.V. PARK



DIRECTIONS

Ford Amateur Astronomy Club

Beginner's Night at Island Lake

**Saturday from 7:30pm to Midnight
June 7th - July 5th - August 9th**

Do you have a new telescope that you would like to learn to use? Do you want to see samples of what the night sky has to offer (weather permitting)? You should consider coming out to Island Lake Recreation Area on Beginner's Night. These nights are dedicated to providing equipment and observing assistance to new astronomers.

(The event will take place on the date indicated regardless of sky conditions, cloudy or clear. If it is raining, the event will be cancelled.)

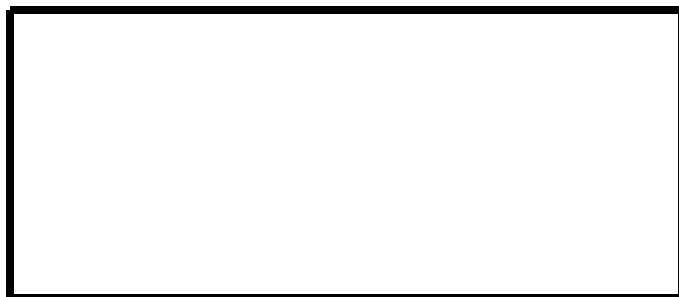
The exact location of the observing site is the "Spring Mill Pond" parking lot and picnic area, at the Island Lake State Recreation Area, on Kensington Road, south of I-96 between South Lyon and Brighton.

For more info or details on this event, send an E-mail message to riderslivonia@aol.com or check the club website at www.boonhill.net/faac

You may also contact John or Dan at Rider's Hobby Shop 734-425-9720

The Ford Amateur Astronomy Club observes at the Island Lake site on Friday and Saturday evenings year round, provided skies are clear. You are welcome to visit the observing site on any weekend, but you must be with a club member if you plan to observe after 10PM. Call 1-313-390-5456 to find out if anyone is going out on any particular night.

Ford Amateur Astronomy Club
Star Stuff Newsletter
P.O. Box 7527
Dearborn, MI 48121-7527



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Store Hours: M-F 10am-9pm SAT 10am- 6pm SUN Noon-5pm	Gen. Manager: John Kirchhoff Website: http://www.riders.com Email: riderslivonia@aol.com	30991 Five Mile Rd. Livonia, MI 48154 Tele: 734.425.9720 Fax: 734.425.2029
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Get ready for Mars!

- Celestron Firstscope 80 AZ refractor \$269.99
Club Member price \$249.99 with this ad!
- New! Celestron Baader Contrast-Booster Filter \$49.99
Club Member price \$39.99 with this ad!
- Celestron Observer's Kit (includes case, eyepieces and filters) with purchase of Celestron telescope \$99.99 (over \$300 retail value)