



# STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 15, Number 11

November-December 2006

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## ... for the Astronomer

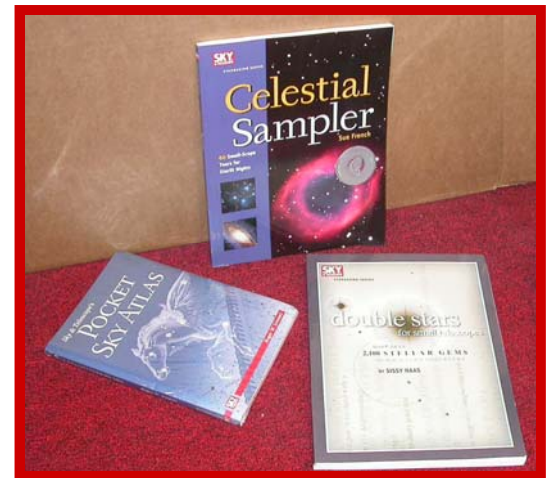
John Kirchhoff / Tom Blaszak / Dale Ochalek

For the amateur astronomer on your list, the idea of a new astro-trinket - filter, eyepiece, camera, adapter, telescope, book, or other, is ever a favored notion. FAAC members John Kirchhoff and Tom Blaszak – both on hand at Rider's Hobby Shop in Livonia – have offered some nice astro-gift ideas this season...

Get expert advice - these observing guides top the book list this year:

Celestial Sampler (\$24.95), Pocket Sky Atlas (\$19.95), and Double Stars (\$29.95), all from the Sky & Telescope publisher and available at Rider's, Livonia.

Photo by Dale Ochalek



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## What's up in 2007?

President's Corner

Don Klaser, President, FAAC

Like most of us I find that things work out better when I have a plan. The arbor I built for the backyard a few years ago came together great with a materials list and some dimensioned drawings (measure twice, cut once). The garden produces best when the Spring program includes tilling some compost and following the companion planting guide.

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# STAR STUFF

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*STAR STUFF* is published eleven times each year by the

**FORD AMATEUR ASTRONOMY CLUB**  
P.O. Box 7527  
Dearborn MI 48121-7527

PRESIDENT:	Don Klaser
VICE PRESIDENT:	Ed Halash
SECRETARY:	Ken Anderson
TREASURER:	Gordon Hansen
NEWSLETTER EDITOR:	Dale Ochalek

The Ford Amateur Astronomy Club (FAAC) meets on the fourth Thursday each month, except for the combined November/December meeting on the first Thursday of December – at Henry Ford Community College, Administrative Services and Conference Center in Dearborn. Refer to our website for a map and directions ([www.boonhill.net/faac](http://www.boonhill.net/faac)).

The FAAC observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains an after-hours permit, and observes on Friday and Saturday nights, and nights before holidays, weather permitting. The FAAC also has use of the dark skies at Richmond Airport, Unadilla, given prior permission. See the FAAC Yahoo Group\* for more information.

Observing schedules and additional information are available on our website ([www.boonhill.net/faac](http://www.boonhill.net/faac)), or via the FAAC Yahoo Group.\* Or call the FAAC Hotline, for info, and leave a message, or ask questions: 248-207-2075.

Membership in the FAAC is open to anyone with an interest in amateur astronomy. The FAAC is an affiliate of the Ford Employees Recreation Association (F.E.R.A.). Membership fees:

Annual – New Member:	\$30	(\$15 after July 1)
Annual – Renewal:	\$25	(\$30 after January 31)
Life Membership:	\$150	

Membership includes the *STAR STUFF* newsletter, discounts on magazines, discounts at selected area equipment retailers, and after-hours access to the Island Lake observing site.

## ASTRONOMY or SKY & TELESCOPE MAGAZINE DISCOUNTS

Obtain the required form from the FAAC club treasurer for a \$10 discount. Send the completed form directly to the respective publisher with your subscription request and payment. Do not send any money directly to the FAAC for this.

## STAR STUFF NEWSLETTER SUBMISSIONS

Your submissions to *STAR STUFF* are more than welcome! Send your story and/or images to the editor at [dake00k@yahoo.com](mailto:dake00k@yahoo.com). Email text or MS Word is fine. *STAR STUFF* will usually go to press the weekend prior to each general meeting. Submissions received prior to that weekend can be included in that issue.

\* FAAC Members are welcome to join our **FordAstronomyClub** Yahoo! Group. Messages, photos, files, online discussions, and more! URL: [groups.yahoo.com/group/FordAstronomyClub](http://groups.yahoo.com/group/FordAstronomyClub).

## President's Corner *(continued from page 1)*

The same holds true for observing. Without a plan, we're left to wander the skies, which isn't bad on occasion but it can be suicide from a time management perspective, if you're on a dedicated observing program such as Messier, Herschel, etc.

For me, the plan arrived with my December issue of Astronomy Magazine. Included inside is a 16-page pull-out booklet entitled "Sky Guide 2007." It contains highlights of the top viewing events - a listing of meteor showers, the dates for the two lunar eclipses, prime viewing times for all the planets, except Pluto, and the return of Mars to opposition on Christmas Eve (gee, I wonder if it'll be as big as a full moon this time too!). In addition, there's a preview of events for 2008, including a total solar eclipse in Canada.

If you don't subscribe to Astronomy Magazine, be sure and pick up a copy of the December issue at your local newsstand.

Speaking of events, we have two of them coming up next month. First is "Ice Daze" at Lake Erie Metro Park. It's a two-day program on the weekend of January 20 and 21. As usual, FAAC will be providing a classroom show including "Astronomy 101" along with an equipment show and tell, as well as nighttime observing for those hardy souls who will venture out.

Second, is our annual trip to Forest Elementary School to be part of their Science Fair, along with Star Lab from the DSC. This event will be held on Wednesday, January 31. Our primary goal is to provide an opportunity for the students and their parents to observe some celestial objects (weather permitting).

"Plan B" is to set up a display of scopes and binoculars and in a technique first used last year, attach some "stars" to the wall across the room for the kids to look at; they seemed happy just to see something through a telescope. If you can, please join us in this worthwhile project.

And lastly, I would like to wish all of you and your families the very best wishes for this holiday season!!

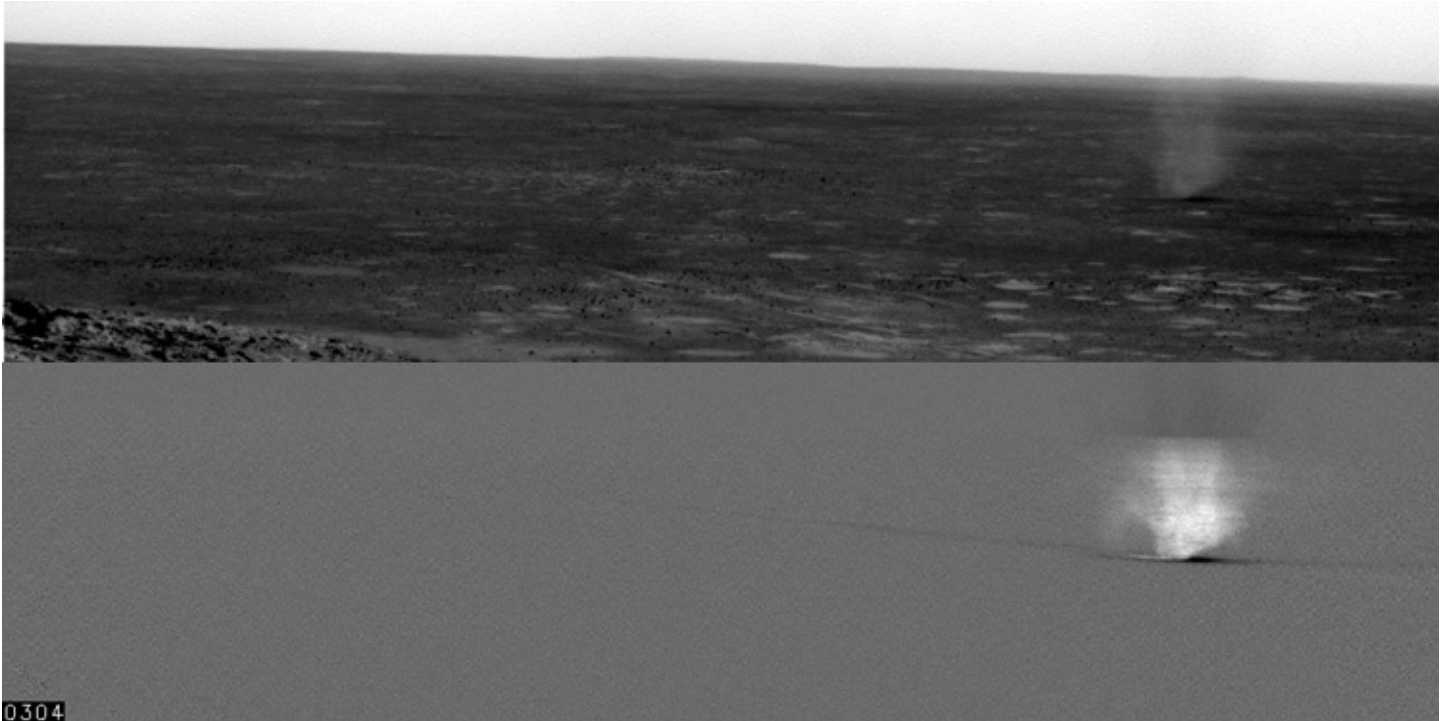


Don Klaser



## Martian Devils

Dr. Tony Phillips



0304

*The top half of this image is part of a series of images of a passing dust devil on Mars caught by Spirit. In the bottom half, the image has been filtered to remove everything that did not change from one image to the other. Notice the faint track left by the dust devil. Credit NASA/JPL/Mark T. Lemmon, Univ. of Arizona Lunar and Planetary Laboratory.*

Admit it. Whenever you see a new picture of Mars beamed back by Spirit or Opportunity, you scan the rocks to check for things peeking out of the shadows. A pair of quivering green antennas, perhaps, or a little furry creature crouched on five legs...? Looking for Martians is such a guilty pleasure.

Well, you can imagine the thrill in 2004 when scientists were checking some of those pictures and they did see something leap out. It skittered across the rocky floor of Gusev Crater and quickly disappeared. But it wasn't a Martian; Spirit had photographed a dust devil!

Dust devils are tornadoes of dust. On a planet like Mars which is literally covered with dust, and where it never rains, dust devils are an important form of weather. Some Martian dust devils grow almost as tall as Mt. Everest, and researchers suspect they're crackling with static electricity—a form of "Martian lightning."

NASA is keen to learn more. How strong are the winds? Do dust devils carry a charge? When does "devil season" begin—and end? Astronauts are going to want to know the answers before they set foot on the red planet.

The problem is, these dusty twisters can be devilishly difficult to catch. Most images of Martian dust devils have been taken by accident, while the rovers were looking for other things. This catch-as-catch-can approach limits what researchers can learn.

No more! The two rovers have just gotten a boost of artificial intelligence to help them recognize and photograph dust devils. It comes in the form of new software, uploaded in July and activated in September 2006.

"This software is based on techniques developed and tested as part of the NASA New Millennium

*...continued on page 5*

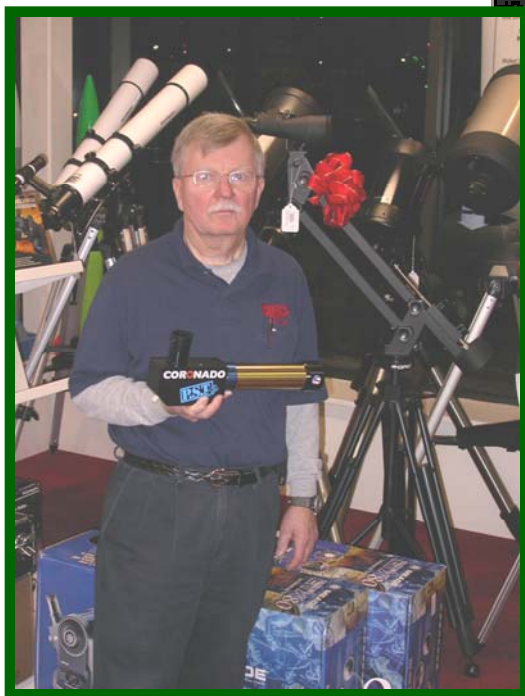


### for the Astronomer...

*(continued from page 1)*

Some of the suggestions here include several fine observing guidebooks, Coronado PST and other telescopes, and a digital dew heater control (**NOTE:** prices are approximate, and may vary, depending on packages, and specials)...

Photos by Dale Ochalek



Above: "Santa's helper" Tom Blaszak, on duty at Rider's Hobby, attends to the hardware - here showing off a Coronado PST, selling for \$499. The Personal Solar Telescope will show you solar prominences, active regions, filaments, as well as other surface details. For telescope and accessory needs, or information, contact Tom or John at Rider's Hobby Shop - call (734) 425-9720.



Below: The popular Celestron SkyScout below is a camcorder-size digital planetarium that uses GPS to locate and identify over 6,000 stars, planets, constellations, and deep-sky gems, at \$399. See a demo model at the Rider's Livonia shop.



Above: Kendricks Digifire 7 digital programmable dew zapper controller (\$139.99)

## Martian Devils... *(continued from page 3)*

Program's Space Technology 6 project. Testing was done in Earth orbit onboard the EO-1 (Earth Observing-1) satellite," says Steve Chien, supervisor of JPL's Artificial Intelligence Group. Scientists using EO-1 data were especially interested in dynamic events such as volcanoes erupting or sea ice breaking apart. So Chien and colleagues programmed the satellite to notice change. It worked beautifully: "We measured a 100-fold increase in science results for transient events."

Now that the techniques have been tested in Earth orbit, they are ready to help Spirit and Opportunity catch dust devils—or anything else that moves—on Mars.

"If we saw Martians, that would be great," laughs Chien. Even scientists have their guilty pleasures.

Find out more about the Space Technology 6 "Autonomous Sciencecraft" technology experiment at [nmp.nasa.gov/st6/TECHNOLOGY/sciencecraft\\_tech.html](http://nmp.nasa.gov/st6/TECHNOLOGY/sciencecraft_tech.html), and the use of the technology on the Mars Rovers at [nmp.nasa.gov/TECHNOLOGY/infusion.html](http://nmp.nasa.gov/TECHNOLOGY/infusion.html). Kids can visit [spaceplace.nasa.gov/en/kids/nmp\\_action.shtml](http://spaceplace.nasa.gov/en/kids/nmp_action.shtml) and do a New Millennium Program-like test at home to see if a familiar material would work well in space

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

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## Minutes - October Meeting

Ken Anderson

Attendees: 26+

Meeting officially started at 5:30 PM with pizza and pop available 15 minutes earlier, in the Hackett conference room of the HFCC Health Careers Building. We welcomed new club member Greg Ozimek, Ian Waldo (U-M Dearborn Astronomy), and Bob Bertha (Warren Astronomy Society). Don Klaser, President, chaired the meeting and led the introductions, and asked for observations.

Jon Blum reported going to Richmond on a clear Sunday night and observed Comet Swan in binoculars, and many Messier objects. Dennis Salliotte and Gordon Hansen observed naked-eye

visible Comet Swan in upper Bootes/Hercules from Lake Erie. Bob Bertha mentioned enjoying the National Geographic TV program Race to Space.

Last month's minutes included some evaluation of the Sky Scout, loaned by John Kirchhoff's Rider's Hobby Shop in Livonia. I tried it out, too, and thought it did a good job locating objects (excellent for locating hard planets like Mercury, Uranus, Neptune), and giving 2-minute descriptions/ stories of 200 objects. The SkyScout did less of a good job identifying objects (example, I pointed at Deneb and it kept on saying it was the central star in the northern cross, and the result was the same for the other 2 points of the cross. It provides a list rank ordered from the brightest object - several degrees wide).

Gary Strumolo gave the tech talk, "What did Galileo See?" describing the quality of what Galileo saw. Previously, Jacob Metius applied for a telescope patent in October 1608 in the Hague, Holland. It had a convex objective and a concave ocular eyepiece and yielded 3-4x magnification. The patent was not granted; it was regarded a cheap toy. Galileo improved the design with a longer focal length, a weak convex objective, and a strong concave ocular, yielding 9x-magnification, useful for both maritime and terrestrial applications. With this Galileo was granted a tenure and salary at the Doge.

Galileo's telescopes are displayed in Florence, Italy - 14x paper covered, 21x leather covered, and a large cracked lens which was used to discover Jupiter's moons at 30x. The 58mm plano convex objective had a 30-40" focal length and was stopped down to 38mm diameter. It used a plano concave ocular with 2" focal length, and yielded a very small 15 arc-minute true field of view (TFOV), since more power yields a smaller field of view.

The long 14x telescope consisted of a 51mm objective stopped down to 26mm, and had a Stehr ratio of 0.83 with the eyepiece. The short 20x telescope had a Stehr ratio of 0.66 with the eyepiece. For more details visit <http://www.pacifier.com/~tpope/>.

We use Keplerian telescope today since two convex lenses with positive eyepiece converge, and it yields a larger TFOV, although upside down.

*...continued on page 6*

## Meeting Minutes ... *(continued from page 5)*

Galileo's telescopes had 1/5 the TFOV, so he only saw a very small portion of the moon at a time, but he could see more if he moved his eye around (unlike eyepieces today). Galileo's negative eyepiece divides the light so there is no true exit pupil. Galileo didn't use the Kepler eyepiece because this inverted the image, and they preferred right side up image (for maritime and terrestrial viewing); nobody actually looked through the positive eyepiece to see the benefit of larger FOV.

Galileo estimated lunar mountain heights using shadow lengths and simple trigonometry. Galileo's lunar observations included craters, mare at first quarter moon. He drew the first quarter moon with a large crater along terminator (bigger than real life). This could be crater Albategnius with 4000m wall height, or crater Ptolemaeus which is very round with a 2900m wall.

Galileo found blindness at age 70, 20 years after his solar observations. Galileo used the projection method to look at the sun so he did not go blind by this activity, counter to many false rumors. Galileo's diverging telescope spreads out light intensity, and does not converge to a focus. Galileo wrote letters describing Umbra, Penumbra, and sunspots in 1612. Today you can buy a new Sunsplitter for \$350 similar to how Galileo observed the sun, except Kepleric design for larger TFOV. Galileo also observed the crescent of Venus, but his view was fuzzier what we see in a Celestron C-8 telescope today. On January 7, 1610 Galileo drew observations of Jupiter and moons as a white ball without bands, and 4 bright stars near a plane; and on subsequent days he concluded Jupiter has 4 moons since their locations varied. Many people questioned the reality of these moons which could be created by the optics (since they couldn't see them naked eye). Galileo's best hand drawing of Saturn showed rings at maximum tilt, but entirely behind the sphere (his first observation had paradigm of one large and two smaller circles). Galileo also observed double star Mizar A and B within the diffraction ring. He saw 4 stars in Alcor (Alcor, Mizar A and B, and possibly Ludwig's star). He only saw 3 stars in M42's trapezium (a, c, d) with accurate size and location.

In conclusion, Galileo saw the nature of the universe, scientific approach, and how difficult it is to change opinions of those in power. He learned

about stopping down to only use the good portion of the lens. In actuality what he saw is better than what most people think, even with single lenses containing bubbles and iron tint.

Bob Bertha, WAS VP, presented his "I'm Only Human," about human perception and visual illusions. Bob's interest in the topic started while in school in California, trying to see the Golden Gate Bridge cables from a class window, when the teacher said this was beyond the human eye's resolution capability, and we perceive it only because our brain knew it should be there. In 1858, Secchi (before Lowell) didn't know whether the lines on Mars were the result of defects in the eye or seeing reality. Lowell attempted to prove they were canals on Mars. The back of the eye has many blood vessels, which the brain ignores in the image we perceive.

Unlike what many believe, the moon is not bigger at the horizon; it just appears that way because we have other reference objects near the horizon, and our brain is used to interpreting things that are further away (behind something) appear smaller than they really are; therefore something that appears big at a horizon must really be huge. Whereas, when the moon has no reference objects in the background it appears smaller, since our brain is not attempting to scale it's size to a reference. The face on the moon looks different when upside down; oriental cultures see a rabbit.

Outside of astronomy, we can read sentences if we switch the middle letters in four-plus letter words. Ancient Greeks learned that to make the Acropolis' architectural columns appear straight, they must really be bowed outward. Other examples included 2D drawings of inconsistent 3D objects - 2-3 prong tuning fork, five-leg elephant, Escher's drawings, etc. For kids - touch your index fingers slowly together near and in front of your eyes; your mind will create the image of a floating middle finger with two fingernails! Our mind also always assumes light comes from above or top. Sometimes it is hard to tell black and white vs. negative/positive pictures apart and which is the real image. San Francisco can make interesting photos if you make the roads horizontal, since the buildings appear tilted. Finally, there was one Rubik's cube which had the center spots actually be the same tan color, but appeared dark brown on top lit surface, and bright

*...continued on page 7*

## Meeting Minutes ... (continued from page 6)

orange on side shadow surface; to prove it Bob had to make everything else with holes in the paper just for these two spots!

In the business portion of the meeting, Ken Anderson had posted both August and September minutes on the web. September minutes were also posted in the newsletter, with a summary of August minutes not available for the previous newsletter. Jon Blum noted in the minutes in the October newsletter, a formula was stately incorrectly, and should have been  $TFOV = AFOV / \text{Magnification} = AFOV * (\text{focal length of eyepiece}) / (\text{focal length of objective})$  with all units being mm; the September minutes have been corrected and posted on the FAAC Yahoo site. With this the minutes were approved. Gordon Hansen said we have \$5275 total in the bank, after paying \$2100 for club ware, of which \$1500 is for GLAAC.

In the projects / committees / events discussion:

Bob MacFarland and Gordon Hansen recapped the GLAAC 10th Annual Astronomy on the Beach (Kensington) of from September 29-30. There were two good nights of observing, with lots of kids participating in the sky tour on Saturday. The featured speaker, NASA Astronaut Dr. Andrew "Drew" Fuestel of Ale Orion origins discussed his unique training experiences in both Antarctica's desert and the gulf of Mexico's sea bottom. Kevin Dehne wowed the kids with his frozen nitrogen demo "How Cold is Space?" Gordon Hansen followed with Astronomy 101, determined to make a more kid-friendly version (for when the audience includes elementary school kids).

Other Presentations/Shows were also well attended: Comet Making, How to Choose and Use Telescopes, Light Pollution, Tour the Constellations. Not many requested "Beginner Night & Sky Orientation", but Ken Anderson noted one astronomy college student attempting to observe objects from his professor's preferred list, and helped him out when the crowd died down.

Tony Licata reminded us of the SIG meeting every second Thursday each month at 5:30PM in HFCC Rosenau Conf Room. Next 11/9/06 presentation is Mike Russo's "Periodic Error and Mounts." They will also conduct a poll for future topics.

Next FAAC club meeting is December 7, 5:30 pm in HFCC Rosenau Conf Room for November and

December; due to the holidays we only meet once for both months.

Don Klaser gave a recap of the 11th Annual Sally Ride Science Festival for 5-8 grade girls on October 1 at Macomb Community College. Ken Anderson and Gordon Hansen, and Bob Bertha (WAS) brought Coronado H alpha solar telescopes, and Don and Jan Klaser had their white light filters for solar observing. Ken also brought his 10" Dob for terrestrial observing (witch, ghost, and pumpkins across the street) when the sky became cloudy. Gordon presented 90-minute Astronomy 101 to adults, after an equipment talk by Don, Ken, and Gordon, and feedback for both was very positive. Ken's daughter Yolanda enjoyed both "making batteries out of lemons" and "plant/insect co-evolution" 45-minute sessions. Astronaut Kathy Sullivan presented the future of space vs. reality from when she was a kid, and concluded with what the future of space looks like for the young girls in the audience (human travel to mars, visiting the moon, etc). Note almost all sessions were led by leading women in their fields, setting good examples for future career women, and encouraging girls to continue in the sciences.

Many FAAC members were at Lyon Park on November 8 to observe the Mercury transit of the sun, from 2 pm to sunset locally, despite the cloudy skies. Most enjoyed the friendship and a dinner, viewing only via images on the internet.

The FAAC board voted to terminate singing up for \$150 lifetime membership after January 31, 2007, so this is your last chance. We currently have 83 regular members (60%), and 68 lifetime members (40%). Previously, lifetime membership caused a financial drain due to Astronomical league and paper newsletters, without new income. Normal annual membership is \$25/year (\$30 if late after January 31, 2007).

Diane Worth informed members that club apparel is in, and tonight (October 26) is last night to order. Fifty patches were ordered for \$9-10 each and may be available at December 7 meeting. Eight shirts are available for immediate purchase (3M, 4L, 1XL). The next order will be after the XMAS dinner. Prices are as follows: Sport Bag "for Astro Star Chart" \$15.11, Hateras Sport Bag Royal w/ Black \$38.43, Perimutter Lubin Cool and Dry Cap \$14.05, Bill Bass Premium Woven 60/40

...continued on page 8

## Meeting Minutes ... (continued from page 7)

dress shirt \$36.51, Basic Expandable Bag/Brief Case \$18.29, Sweat Shirt Port Authority Hooded Pullover \$35.66, Jacket Port Authority Legacy Black/Grey \$41.81, and Ottoman Short Sleeve Shirt ("Our club black shirt" or white) \$31.84.

Steve Harvath informed everyone that they have new photo luminescent tape so guests can see telescopes/equipment at star parties.

The Lake Erie observing site requires you to call before 4 pm and arrive before the park closes/locks the entrance gate at 10 pm. The exit gate always remains open.

George Korody says the Astronomy Village consists of approximately 110 acres and is southwest of Alpena. Future owners will be able to camp, build cottages, homes, observatories; but will have "subdivision" restrictions to maintain dark skies, etc.

Bob FitzGerald reminded us of the FAAC Hotline number 248-207-2075. Gary Stahl reminded everyone on the FAAC astronomy club library. Call Gary the Monday before club meetings if you want him to bring books. Gary is still seeking submissions for the club library, especially the imaging CD library. Please use links, if available, when sending E-mail to web sites.

The meeting was adjourned at 8:50 pm, with club members picking up and ordering club attire.

## Time to Renew, Members!

Gordon Hansen

It's time to renew your membership in FAAC! Send your check in today payable to FAAC, P.O. Box 7527, Dearborn, Michigan 48121-7527.

Membership includes access to the observing sites at Island Lake Recreation Area, Lake Erie Metro Park, and Richmond Airport. Discounted subscriptions to *Sky & Telescope* and *Astronomy* magazines. **AND** most importantly, the interaction with people who share your love for astronomy.

Renewal fees for 2006 are only \$25, and after January 31, \$30! Or sign up for a Life Membership for \$150 and never pay dues again.

**NOTE: No new lifetime memberships available after January 31, 2007!**

## For Sale

**Coulter 10" Dobsonian** telescope. \$400.  
Contact Bob Stonik, 313-361-4954.

**Celestron Orange Tube 8"** (mid-1970s) Very good condition, no scratches, w/camera mount, tripod. RA bearings, slo-mo Dec fine. Corrector plate needs cleaning; needs a visual back and diagonal.

Contact Dr. Nicolle Zellner, Albion College  
nzellner@albion.edu

**Meade ETX Spotting Scope** 5-inch, Paragon Plus tripod, 26mm Super Plössl, 9.5mm Orion Epic, 13mm Orion Superwide Lanthanum. Nearly new, must sell. Could sell individually.

Contact Jack Fournier, 248-219-6222

**Wanted: Meade Autostar II** –  
Need replacement hand paddle controller for Meade LX200 GPS.

Dale Ochalek dake00k@yahoo.com 734-717-8810

**Schmidt-Newtonian 10"** –  
F5.35, 1360 mm focal length with 2" focuser. Includes 60 mm guide scope, Full aperture solar filter by Thousand Oaks (Mylar). Also includes cooling fan, extra set of "O" rings. Corrector plate made by Optron systems (division of Nazca Corp. of Callifornia).

Also available is the Crestliner mount (on wheels).

Scope made by Nelson Lewis of Detroit Astronomical Society in 1962. Purchased Nov. 10, 1981.

Selling telescope for \$325.  
Mount for \$200.

Contact: Harold Thomason  
313-584-7465



## Astro Imaging SIG

Tony Licata

The next meeting of the Astro Imaging S.I.G. will be held, Thursday, January 11, 2007, 5:30 pm at Henry Ford Community College in Dearborn, in the Administrative Services & Conference Bldg. (same as the FAAC General Meeting).

The topic for the meeting will be announced later. All Club members and their guests are invited.

If you drive up to the Faculty parking lot gate, it should open allowing you to park close to the building.

## FAAC General Meeting Agenda

**December 7, 2006 (5:30 pm)**

### Opening/Introductions

**Tech Talk - Holiday Astro Gear** (John Kirchoff)

**Presentation - Space Travel in 3-D** (Dave D'Onofrio – Warren Astronomical Society)

### Club Business Items

- Secretary / Minutes (Ken Anderson)
- Treasurer's Report (Gordon Hansen)

### Club Projects / Committees / Member support

- Mercury Transit Recap (All)
- Astro Imaging SIG (Tony Licata)
- Nominating Committee-January Elections- (Bob FitzGerald)
- Equipment Chairperson (Don Klaser)
- Swap Meet - 2007- (Tom Blaszak)
- Ice Daze at Lk. Erie Metro Park (Bob MacFarland)
- Forest Elementary Science Fair (Don Klaser)
- Walk-ins

## Sky Calendar

Jim Frisbie

### December

- 3 Su Moon occults Pleiades
- 4 Mo Full moon 7:25 pm Cold Moon
- 10 Su Saturn 1.2 degrees south of moon 6:44 am
- 10 Su Jupiter /Mercury are .3 deg. apart at dawn
- 11 Mo Mars passes 0.8 degrees s of Jupiter-am
- 12 Tu Last Quarter moon 9:32 am
- 13 We Geminid meteor shower maximum
- 15 Fr Moon 0.8 degrees south of Spica 5:06 am
- 18 Mo Moon passes 5 degrees south of Mars-am
- 20 We New moon 9:01 am
- 21 Th Winter Solstice 7:22 pm
- 27 We First Quarter moon 9:48 am

*All times in Eastern Daylight Time.*

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

## Treasurer's Report

Gordon Hansen

### Bank Accounts

Checking	\$	962.00
Savings	\$	1442.89

**TOTAL Bank Accounts \$ 2404.89**

### Cash Accounts

Cash Account	\$	108.83
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**TOTAL Cash Accounts \$ 108.83**

### Asset Accounts

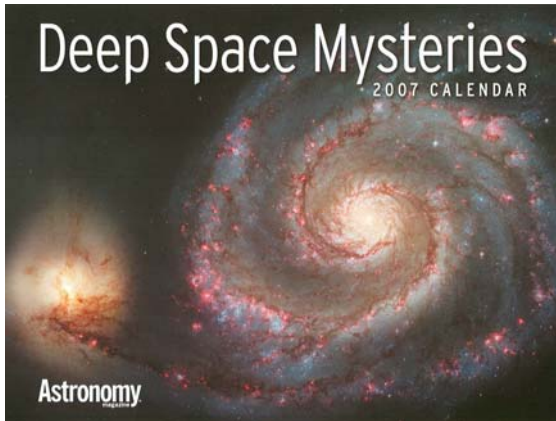
GLAAC	\$	1497.21
Projector	\$	686.38
Scholarship	\$	217.05

**OVERALL TOTAL \$ 4914.36**

## 2007 Calendars

Gordon Hansen

Once again the club is selling Astronomy Magazine's calendar at a discount. The calendar Club members can purchase them for \$7.00 - normally selling for \$12.95 - a 45% discount!



Calendars will be available at the December 7 club meeting. If you will not be attending, but, would still like to purchase one (or more!), you can send an email to:

[fordastronomy@comcast.net](mailto:fordastronomy@comcast.net)

Mailing charges of \$3 will be added.

These make great stocking stuffers!

## New Members

Gordon Hansen

The FAAC acknowledges and welcomes the following new memberships during 2006:

- Tim McKim
- Preston Crofts
- Phillip Ruff
- Eddie Bostick
- Nick Ryan
- John Wrosch
- Charles Frayer
- Michael Maurer
- Thomas Voydanoff
- Mike Best
- David Kramek
- Jack McGill
- Greg Ozimek

We hope your FAAC membership will be rewarding and enjoyable (hope we didn't miss anyone). Let us know how we can help you enjoy amateur astronomy.

## Moon Mosaic

John Kirchhoff

The crater trio of Theophilus, Cyrillus and Catharina (top to bottom). Four-image mosaic, shot November 10, 2006.

Celestron 9.25SCT @f/25 Atik 1HS webcam.





**RIDER'S**  
**HOBBY SHOPS**

# The 4<sup>th</sup> Annual Astronomy Show & Swap Meet

Hosted by  
Ford Amateur Astronomy Club (FAAC)  
and Rider's Hobby Shop – Livonia

**Saturday, Feb 03, 2007 9:00 am - 3:00 pm**

Holy Cross Church Gymnasium, 30650 Six Mile, Livonia, 48152

## Included: ASTRONOMY PRESENTATIONS

- 10:00 am: **Al Rothenberg** "Eclipses: Short But Oh So Sweet";  
11:00 am: **Clay Kessler** "Getting Started In Astronomical Imaging"  
12:00 noon: **Jim Frisbie** "Binocular Observing"  
1:00 pm: **John Kirchhoff** "Astronomical Hardware and Equipment"

Planetarium Lectures @ 10am, 11am, 1pm, 2pm

### Earn Cash By Selling Your Extra:

Telescopes - Eyepieces - Cameras - Binoculars - Mounts  
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Admission: \$5.00 in advance or \$6.00 at the door  
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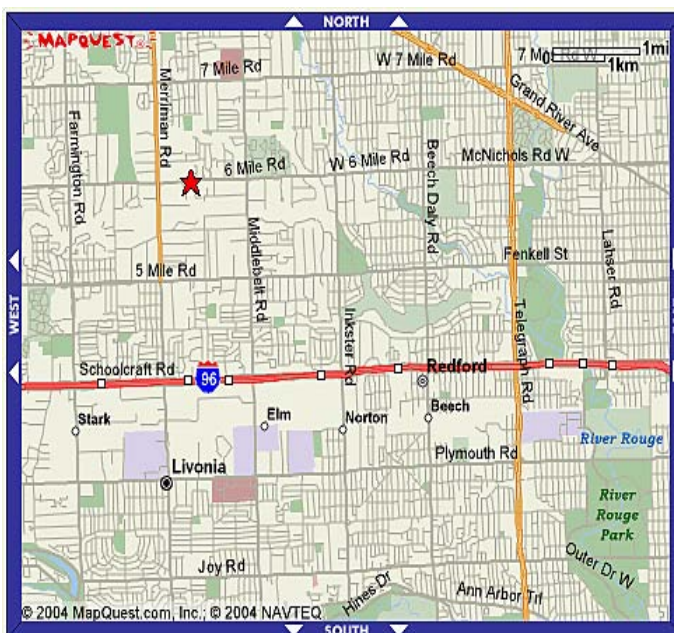
Sales Table: **\$15 in advance, or \$20 at the Door, as available. One admission included.**

**Advanced Registration ends January 21, 2007.**

Doors open **8:00am for setup**. Complimentary coffee & donuts provided by Rider's Hobby.

Send check, payable to FAAC, for **advance admission or table registrations**: FAAC, P.O. Box 7527, Dearborn, MI 48121-7527 - by Jan. 19, 2007.

**Location:** Holy Cross Lutheran Church Gymnasium  
30650 Six Mile, Livonia, 48152, north side of Six Mile,  
½ mile east of Merriman. See **STAR** on map.



For More Information: **Contact Tom via email: [key\\_string\\_guy@yahoo.com](mailto:key_string_guy@yahoo.com) or call (313) 516-5978, or John Kirchhoff via email: [riderslivonia@aol.com](mailto:riderslivonia@aol.com) or call (734) 425-9720**

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## HOBBY SHOPS



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