
STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

AstroPhysics Phun Phacts - Titan

by Vicki Burnett

Jean-Dominique Cassini and Christiaan Huygens would be very proud, possibly even weeping and hugging each other (like those guys at JPL do at times like this - we've all seen them do it). The \$3 billion Cassini-Huygens mission to Saturn and Titan was a joint effort between NASA, ESA (European Space Agency) and the Italian space agency, beginning its 744 million mile journey from Cape Canaveral Florida back in 1997. The outcome of the entire mission has been a huge success.

The Huygens probe set off from the Cassini ship on December 24, 2004, and landed on Titan on January 14, 2005. (Titan is Saturn's largest moon and is larger than the planet Mercury.) The probe "defied expectations of a quick death and continued to transmit for several hours" and the data being sent back will be analyzed for years to detect everything possible about Titan such as how it formed, how it works, and what it can tell us about the Earth's own development, its atmosphere, its composition, and landscape. Scientists think the atmosphere is similar to Earth, because of the presence of nitrogen, and could provide clues as to how life began on our planet.

Continued on page 2

Reminder: It's time to renew your membership in FAAC!

If you haven't renewed your membership now's the time. Send your check in today to:

**FAAC
P.O. Box 7527
Dearborn, Michigan 48121-7527**

Renewal fees for 2005 are only \$25 if received by the end of January. After January 31 late renewals are \$30. If you prefer you can convert to a Life Membership for \$150 and never have to worry about paying dues again.

Please include any updates to your address (snail mail or email), phone number, etc.



New Year

by Dale Ochalek, President, FAAC

It's another year – and just what happened to 2004? I was not impressed; not only did it seem inordinately cloudy - I spent much time combing through want ads, and dispatching the resume, hither and yon. Now that it's a New Year, I have found I am back on someone's payroll at Ford, at least, and can start to catch up with expenses; knock on wood.

That means though, the weather watchers have nothing to fear any time soon, from any significant telescopic purchase

by me. In fact, I may try to get leaner and meaner, and sell off some things at the upcoming 2nd Annual FAAC Swap Meet. Organized again by Jim Frisbie, the Swap Meet is Saturday, February 5, 2005, at the Holy Cross Lutheran Church Gymnasium, 30650 Six Mile, Livonia, 9am to 3 pm. Be sure to attend! You can rent a table for your wares. Or just come to peruse the bargains, and chew the fat. Advance sign-up is available at a discount - but hurry (January 27 deadline). See the Swap Meet page in this newsletter, for all the facts.

NOTE: This year's Meet could be even better than last, with the addition of expert presentations by Clay Kessler, Gary

Strumolo, John Kirchhoff, and Gordon Hansen throughout the day. John Kirchhoff and Ryder Hobby are co-sponsoring.

Kidding aside, our club is healthy and growing, and 2004 was a fine year; we found a new meeting home, and are establishing new cooperative arrangements with our friends at Henry Ford Community College. We had lots to keep us busy, including transits, eclipses, star parties, etc., etc. We hope for another successful year in 2005; things to look for in 2005 include perhaps a new club observing site, a new Club Library, possibly with some new materials to fill it, and more of our outreach efforts and observational outings.

There will be lots to get inspired about in 2005, really! Despite the clouds. Watch out in the coming months, regarding science and astronomical events. As you know, NASA scientists are again expanding the bounds of our technical research capabilities. Deep Impact just launched, with a mission to crash into a comet, and expose the core comet materials to observation. And, of course, the Cassini mission and Huygens probe are just now sending back promising data and images from Titan. We may get more clues there to the origins of our solar system, and our home planet. Stay tuned.

If you were wondering - the probe was named in honor of the Dutch scientist, Christiaan Huygens, who discovered Titan in 1655 (good Jeopardy question? – hmmm...).

The Astrophotography SIG continues on; the recent SIG meeting featured an amazing demonstration led by Jeff Thrush, on remote control observatory setup and operation. There is no shortage of technical knowledge in this club, I daresay.

By the way - don't forget, this month we have the annual FAAC officer election. Be sure to nominate your favorites for an available position, or, we'll even let you volunteer your own name! We can never have too many offers for help in managing our club.

This club has been especially fortunate with the efforts and support of our members. As ever, the FAAC is only as good as our efforts and our people. Greg Burnett will be counting on you still, for your new article or photo for the newsletter, and we are always thankful for a new meeting presentation, and your support at the next FAAC outing. In short, good year in 2004; can we do it again, in 2005.

--Dale Ochalek

... Phun Phacts

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Our little probe, being only 8.9 feet in diameter and weighing 703 pounds, was sending back pictures and data even as it parachuted down onto the icy surface of Titan, and continued its mission successfully after it had landed under the thick orange hazy clouds of Titan. A "penetrometer" on the bottom of the probe, which poked into the ground when it landed, indicated the soil had a consistency of wet sand or clay and is covered by a thin crust . . . "of something." The thick atmosphere carries sound waves and the microphones on the probe recorded the sound of rushing wind as it descended, all indications being that Titan is a pretty noisy place. Another finding was that the air temperature at the landing site was



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FORD AMATEUR ASTRONOMY CLUB
P.O. Box 7527
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PRESIDENT: Dale Ochalek
VICE PRESIDENT: Don Klaser
SECRETARY: Bob MacFarland
TREASURER: Gordon Hansen

NEWSLETTER EDITOR: Greg Burnett

CLUB INFORMATION

The Ford Amateur Astronomy Club holds regular general meetings on the fourth Thursday of each month, except for the combined November/December meeting held on the first Thursday of December. Meetings are held in the Administrative Services and Conference Center building at Henry Ford Community College in Dearborn. Refer to our website for a map and directions.

The Ford Amateur Astronomy Club 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.

Observing schedules and additional information are available by calling the FAAC Observing Hotline at 313-390-5456, on the Ford Intranet at www.be.ford.com/astro/faac.html, and on the public internet at www.boonhil.net/faac

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

Membership fees are as follows:

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 *ASTRONOMY* and *SKY & TELESCOPE* magazines, discounts at selected area equipment retailers, and after-hours access to the Island Lake observing site.

MAGAZINE DISCOUNTS

Do not send money to the FAAC for *ASTRONOMY* or *SKY & TELESCOPE* magazine subscriptions. Obtain a discount form from the club secretary and send the form directly to the publisher with your subscription to receive a \$10 discount.

STAR STUFF NEWSLETTER SUBMISSIONS

Your submissions to *STAR STUFF* are more than welcome! Send all items to the editor at skyfog@comcast.net preferably in MS-Word format, but in-line email text is fine too. *STAR STUFF* will usually go to press the weekend prior to the week of each general meeting. Submissions received prior to that weekend will be included in that issue.

minus 291 degrees F (minus 180 degrees C). (I peek at my thermometer for the outside temperature and it's currently 8 degrees F. I don't feel too bad about that anymore, considering what we know about Titan.) The pictures you've initially seen of Titan, although I thought it looked a little like Mars with its orangey red color and boulders and rocks littered throughout, were really pictures of boulder- and rock-sized ice. More pictures showed channels, "dirty" ice ridges, seas (of liquid natural gas), and indications of liquid from rain. "There's a lot of evidence of fluid flow" said Martin Tomasko, the principal investigator for Huygens' Descent Imager-Spectral Radiometer (DISR), an on-board imaging instrument. While it does not rain every day on Titan, Tomasko and colleagues speculated there must be some sort of regular precipitation on the surface. The atmosphere of Titan includes the key component of methane, along with nitrogen. This has been known for quite some time. But the atmosphere lacks oxygen, which is a good thing. Toby Owen, an atmospheric scientist from Honolulu's Institute for Astronomy said if Titan had oxygen, it "would have exploded a long time ago . . . it's a flammable world!"

Scientists believe methane gas breaks up in Titan's atmosphere, forming smog clouds that then rain methane down to the surface. Titan's methane never evaporates back into airborne smog, unlike the Earth's water, which constantly circulates back into the atmosphere. "There must be some source of methane inside Titan which is releasing the gas into the atmosphere. It has to be continually renewed, otherwise it would have all disappeared," said Owen. Titan has river systems and deltas, protrusions of frozen water ice cut through by channels, apparent dried out pools where liquid has perhaps drained away, and stones — probably ice pebbles — that appear to have been rounded by erosion, the scientists said. The bottoms of the dried-out river channels are coated with what seem to be particles of smog that fall out of Titan's atmosphere, coating the whole terrain. The dirt apparently gets washed off the ridges to collect in the river beds. It did not appear to be raining when Huygens descended through Titan's haze on parachutes, "but it has been raining not long ago," said mission manager Jean-Pierre Lebreton.

Possibilities for future exploration would be to send mobile probes, perhaps balloons to float around before landing. The Mars rover team has already contacted Lebreton to say that "they really now are dreaming of sending their rovers on the surface of Titan," he added. "This is highly possible — that we can now dream seriously of sending rovers on the surface of Titan. We just need the money." (This author bets that they get it!!!)

Excerpts from:

NASA, *Sights and sounds of Titan* (1/16/2005)

USA Today, Science and Space, *Methane rain, river beds found on Titan* (1/21/2005)

MSNBC, Technology and Science, *Seas of natural gas cover 'flammable' Titan* (1/21/2005)

Digital Camera Recommendation

by Greg Miller

In response to an inquiry about digital cameras for astrophotography...

I would highly recommend a Digital SLR camera. I have a Canon EOS Digital Rebel 6.3 Megapixel camera. You can buy this camera new on eBay for under \$1000. You get 2048 X 3072 pixels and the pixel size is 7.2 X 7.2 micron. A couple months ago I wrote an article in *STAR STUFF* that described my setup. But anyway, you can also purchase an electronic shutter switch to allow you to take infinitely long exposures. The camera comes with software and a USB cable to directly attach to a computer. It is very easy to use and it takes beautiful high resolution images.

I purchased a USB extender that allows me to setup my computer in my garage (or if you want, in your house) and I customized my electronic shutter switch to activate my shutter from my computer and download the images about 30 feet from my observatory.

I have used the camera with a Meade #62 T adapter and a Canon T ring, both of which can be purchased off eBay. The ETX uses the #64 T Adapter. You can also use Meade's Variable Eyepiece Projection T-Adapter so you can take images from any telescope with a 1-1/4 eyepiece holder. I have both T Adapters so I can take both prime focus and eyepiece projection images.

I have also piggybacked the camera on my LX200. Last week I took a wide angle photo centered on Orion and I got part of Canis Major and Taurus constellations in the picture. I plan to take more piggyback images like this of all the constellations visible from Michigan. I also tried to photograph Comet Machholz this way but it clouded up on me.

I have my DVD ROM burner up and running so if anyone is interested, I can burn a CD or DVD containing images that I took with my Rebel. Note that I am still looking for image processing software that might work with the camera to sharpen up my images and remove defects. Currently, I have about 1.3 gigabytes worth of images.

One thing you want to watch out for is that dust can get onto the CCD sensor. There is a procedure in the manual for blowing this dust off. I would suggest getting a Starlight filter to help reduce the probability of sensor collecting dust.

The digital rebel easily captures Saturn's dimmer moons when you overexpose Saturn (about 1-3 second exposure times at prime focus).

You can also almost capture the entire Orion nebula in one image! Just the wings of the nebula don't get captured. You could easily mosaic the image with software supplied by the camera.

Welcome New Members!

The Ford Amateur Astronomy Club welcomes the following new members:

Frank Carson
James Dolfi (Life Member)
James and Catherine Foe
Richard Payne

We hope your membership will be rewarding and enjoyable. Let us know how we can help you enjoy amateur astronomy.

ASTRONOMICAL IMAGING S.I.G.

by Jim Frisbie

The Astronomical Imaging S.I.G. will take place at the Henry Ford Community College (HFCC) on Thursday, February 10, 2005 starting at 5:30 PM. Please mark your calendar. We will have a time slot that extends to 8:00 PM as needed. The program will be announced later.

We will meet in Roseneau Conference Rooms A & B, which are the same rooms where the regular FAAC General Membership meetings are held. The Roseneau Conference Rooms are in the Administrative Services and Conference Center (ASCC) building. Parking can be in Lot J or in the Staff Parking lot next to the ASCC building. Security has advised that if you drive up to the "J" Lot gate it should open during our meeting arrival time.

FOR SALE...

Meade ETX-125EC "Go To" Telescope Outfit, including...

AutoStar Electronic Controller
 LX-10 Heavy Duty Tripod
 Right-Angle Finder Scope
 Meade 26mm Super Plossl Eyepiece
 #775 Hard Carrying Case
 #64 Camera Adapter
 Thousand Oaks Full-Aperture Type 2-Plus Solar Filter
 Celestron Vibration Suppression Pads
 #765 Soft Accessory Bag
 Custom Pictorial Dew Sleeve

Like-New Condition, barely used; includes over \$350 worth of accessories...Yours for \$850.00. Contact Vicki Burnett at vlb02@comcast.net

Minutes of the FAAC General Meeting

by Don Klaser for Bob MacFarland

December 2, 2004

The meeting was called to order by President Dale Ochalek at 5:30 p.m., with 38 members and guests in attendance.

Gordon Hansen asked everyone to indicate on the sign-in sheet if they would be willing to forego a hardcopy version of the newsletter and get their copy via the internet. As the pizza and pop were enjoyed everyone introduced themselves.

Business Items

The Secretary's report was accepted as published in *STAR STUFF*. The Treasurer's report was given by Gordon Hansen, and can be found elsewhere in this newsletter.

Projects & Committees

The Astro-Imaging SIG meeting will be held on Thursday, January 13, 2005 at 5:30 p.m. in Roseneau conference rooms A & B. Mike Bruno spoke about the training program for planetarium guides at HFCC. Don Klaser recapped the program given to Scout Troop 854 at St. Michael's Church in Canton. Lake Erie Metro Park "Ice Daze" will be held on

Saturday, January 15 - volunteers are needed. Don Klaser talked about the upcoming outreach events at Forest Elementary school in Farmington Hills on Thursday, January 20 and a Webelos Blue and Gold banquet at St. Thomas a' Beckett Church in Canton on Saturday, January 29.

Garry Stall has agreed to become our new club Librarian. The library will be located in a room adjacent to Dr. Jacobs' office in the Science Bldg. We are in need of a locking double-door cabinet to house our collection; if you know of one that is available, please contact Garry or one of the club officers. The swap meet is still in need of a location - please forward any and all suggestions to Jim Frisbie. The annual FAAC dinner party will be held in early April at Station 885 in Plymouth (last year's venue). The observing site committee will be meeting at George Korody's house next week; they will be seeking criteria for the new site.

Greg Burnett talked about putting together a 10 year retrospective of *STAR STUFF* newsletters on CD and is seeking assistance from the membership in getting it accomplished. Greg also announced his retirement from presenting Astronomy 101, and is looking for a new standard-bearer for this program. Gordon Hansen agreed to take over the reins. Tom Blazak is looking for volunteers to help with a presentation/observing session at Lyon Oaks County park on Saturday, December 18. Contact Tom if you are able help.


The membership then went over to the HFCC Planetarium for a demonstration on some of its capabilities. We will be treated to a full presentation at another meeting TBD.

Astronomical Calendar





by Jim Frisbie

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

January

	25	Tu	Full Moon (5:31 am)
	31	Mo	Jupiter near Moon

February

	2	We	Last Quarter Moon (2:23 am)
	3	Th	Moon near Antares
	5	Sa	Mars near Moon
	8	Tu	New Moon (5:28 pm)
	15	Tu	First Quarter Moon (7:18 pm)
	21	Mo	Venus at Aphelion
	23	We	Full Moon (11:53 pm)
	27	Su	Jupiter near Moon

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

FAAC DINNER BANQUET 2005

by Jim Frisbie

Please mark your calendars! The Annual FAAC Dinner Banquet will be held on Saturday, April 2, 2005 at Station 885 in Plymouth from 6:00 pm until ? More detailed information will be available for the next edition of *STAR STUFF*.

Treasurer's Report

by Gordon Hansen

December 2, 2004

Bank Accounts	
Checking	\$ 298.15
Savings	\$ 1,324.83

TOTAL Bank Accounts	\$ 1,622.98
Cash Accounts	
Cash Account	\$ 88.22

TOTAL Cash Accounts	\$ 88.22
Asset Accounts	
FERA Ticket Sales	\$ -
GLAAC	\$ 795.00
Projector	\$ 714.25
Scholarship	\$ 117.00
Swap Meet	\$ -

TOTAL Asset Accounts	\$ 1,626.25

OVERALL TOTAL	\$ 3,337.45

STAR STUFF Submissions

by Greg Burnett

The *STAR STUFF* newsletter is the print and online journal of the Ford Amateur Astronomy Club, recording and documenting the activities and accomplishments of the FAAC membership. *STAR STUFF* readers want to know what you've been up to! Share your articles, stories, book reviews, equipment reviews, poetry, event photographs, astrophotographs, or anything of interest by publishing them in *STAR STUFF*. These make the newsletter *yours* and a true reflection of the activities of our club.

IMPORTANT: Your contributions are welcome any time...please do not feel you are working to a deadline if you'd like to submit something. However, if you are aiming at a particular issue, you normally need to get your material to the editor sometime during the third week of the month, the week prior to the meeting week. **Send submissions to skyfog@comcast.net** You can email in-line text, or MSWord, or whatever is convenient for you...the editor will coerce it into the proper format for the newsletter.

ALSO IMPORTANT: Do not think you must be a Pulitzer Prize contender to write something for your newsletter. The membership is interested in hearing your ideas, experiences, and opinions. Please share them freely.

Thanks for your continued support.

Full Moon Names for 2004

contributed by John Schroer

January 25, 5:32 a.m. EST -- The Full Wolf Moon. Amid the zero cold and deep snows of midwinter, the wolf packs howled hungrily outside Indian villages. It was also known as the **Old Moon** or the **Moon After Yule**. In some tribes this was the **Full Snow Moon**; most applied that name to the next moon.

February 23, 11:54 p.m. EST -- The Full Snow Moon. Usually the heaviest snows fall in this month. Hunting becomes very difficult, and hence to some tribes this was the **Full Hunger Moon**.

March 25, 3:58 p.m. EST -- The Full Worm Moon. In this month the ground softens and the earthworm casts reappear, inviting the return of the robins. The more northern tribes knew this as the **Full Crow Moon**, when the cawing of crows signals the end of winter, or the **Full Crust Moon** because the snow cover becomes crusted from thawing by day and freezing at night. **The Full Sap Moon**, marking the time of tapping maple trees, is another variation. This is also the **Paschal Full Moon**; the first full Moon of the spring season. The first Sunday following the Paschal Moon is Easter Sunday, which indeed will be observed two days later on Sunday, March 27.

April 24, 6:06 a.m. EDT -- The Full Pink Moon. The grass pink or wild ground phlox is one of the earliest widespread flowers of the spring. Other names were the **Full Sprouting Grass Moon**, the **Egg Moon**, and -- among coastal tribes -- the **Full Fish Moon**, when the shad came upstream to spawn.

May 23, 4:18 p.m. EDT -- The Full Flower Moon. Flowers are abundant everywhere. It was also known as the **Full Corn Planting Moon** or the **Milk Moon**.

June 22, 12:14 a.m. EDT -- The Full Strawberry Moon. Known to every Algonquin tribe. Europeans called it the **Rose Moon**.

July 21, 7:00 a.m. EDT -- The Full Buck Moon, when the new antlers of buck deer push out from their foreheads in coatings of velvety fur. It was also often called the **Full Thunder Moon**, thunderstorms being now most frequent. Sometimes also called the **Full Hay Moon**. The Moon will also be at perigee later this day, at 4:00 p.m., at a distance of 221,928 mi./357,158 km miles from Earth. **Very high ocean tides** can be expected from the coincidence of perigee with full Moon.

August 19, 1:53 p.m. EDT -- The Full Sturgeon Moon, when this large fish of the Great Lakes and other major bodies of water like Lake Champlain is most readily caught. A few tribes knew it as the **Full Red Moon** because the moon rises looking reddish through sultry haze, or the **Green Corn Moon** or **Grain Moon**.

September 17, 10:01 p.m. EDT – The Full Harvest Moon.

Traditionally, this designation goes to the Full Moon that occurs closest to the Autumnal (Fall) Equinox. In two years out of three, the Harvest Moon comes in September, but every third year it occurs in October. At the peak of the harvest, farmers can work into the night by the light of this moon. Usually the full Moon rises an average of 50 minutes later each night, but for the few nights around the Harvest Moon, the Moon seems to rise at nearly the same time each night: just 25 to 30 minutes later across the U.S., and only 10 to 20 minutes later for much of Canada and Europe. Corn, pumpkins, squash, beans, and wild rice -- the chief Indian staples -- are now ready for gathering.

October 17, 8:14 a.m. EDT – The Full Hunter's Moon.

With the leaves falling and the deer fattened, it is time to hunt. Since the fields have been reaped, hunters can ride over the stubble, and can more easily see the fox, also other animals, which have come out to glean and can be caught for a thanksgiving banquet after the harvest. **A very minor (6.8% coverage) partial eclipse of the Moon** will take place between 7:34 and 8:32 a.m. EDT and will be visible from western and central sections of North America.

November 15, 7:58 p.m. EST – The Full Beaver Moon.

Time to set beaver traps before the swamps freeze to ensure a supply of warm winter furs. Another interpretation suggests that the name Beaver Full Moon come from the fact that the beavers are now active in their preparation for winter. Also called the **Frosty Moon**.

December 15, 11:15 a.m. EST – The Full Cold Moon;

among some tribes, the Full Long Nights Moon. In this month the winter cold fastens its grip, and the nights are at their longest and darkest. Also sometimes called the **Moon before Yule** (Yule is Christmas, and this time the Moon is only just before it). The term Long Night Moon is a doubly appropriate name because the midwinter night is indeed long and the Moon is above the horizon a long time. The midwinter full Moon takes a high trajectory across the sky because it is opposite to the low Sun.

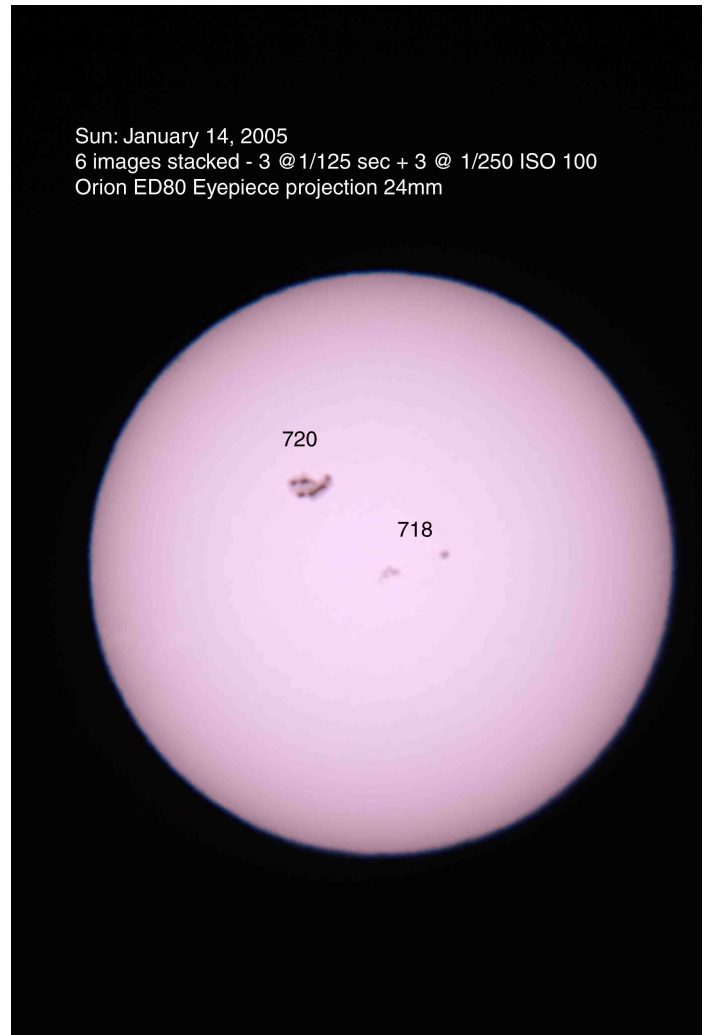
Courtesy of Space.com

Astrophotography

A few pics from our members...



John Kirchoff



Gordon Hansen



John Kirchoff



RIDER'S
HOBBY SHOPS

Don't Miss *The 2nd Annual FAAC*

Astronomy Swap Meet

*Co-hosted by the
Ford Amateur Astronomy Club (FAAC)
& Rider's Hobby – Livonia*

Saturday, February 5, 2005 - 9:00 am to 3:00 pm

Earn Cash By Selling Your Extra:

Telescopes - Eyepieces - Cameras - Binoculars - Mounts
Tripods - Software - Publications & Accessories, etc.

Or, locate that special bargain you might not otherwise find!

Added Feature: **ASTRO PRESENTATIONS** throughout the day.

FILM ASTRO IMAGING by Clay Kessler at 9:30 am; **SKETCHING & OBSERVING** by Gary Strumolo at 11:00am; **ASTRONOMY 101** by Gordon Hansen at 12:30pm; and **VIDEOCAM IMAGING** by John Kirchhoff at 2:00pm.

Admission: \$5.00 in advance or \$6.00 at the door
(children 15 and younger – Free)

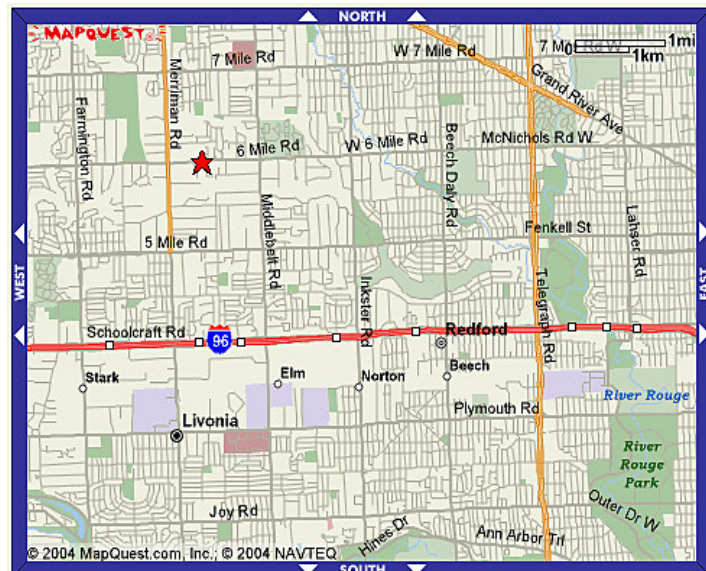
Sales Table: \$15 in advance, or as available at the
Door, \$20 (one admission ticket included).

Advanced Registration ends January 27, 2005.

Doors Open: 8:00am for setup. *Complimentary
Coffee & Donuts provided by Rider's Hobby.*

Make Checks Payable: to FAAC for advance
admission or table registrations. **Send payment to
Ford Amateur Astronomy Club, P.O. Box 7527,
Dearborn, MI 48121-7527 - by Jan. 27, 2005.**

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



For More Information: Contact Jim via email: w8tu@comcast.net or call (734) 453-1422, or
John Kirchhoff via email: riderslivonia@aol.com or call (734) 425-9720

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