



STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

March 2003
Volume 12 Number 3



Editor: Jim Frisbie

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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.

Ford Amateur Astronomy Club
P.O. Box 7527
Dearborn MI 48121-7527

<http://www.boonhill.net/faac>

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:

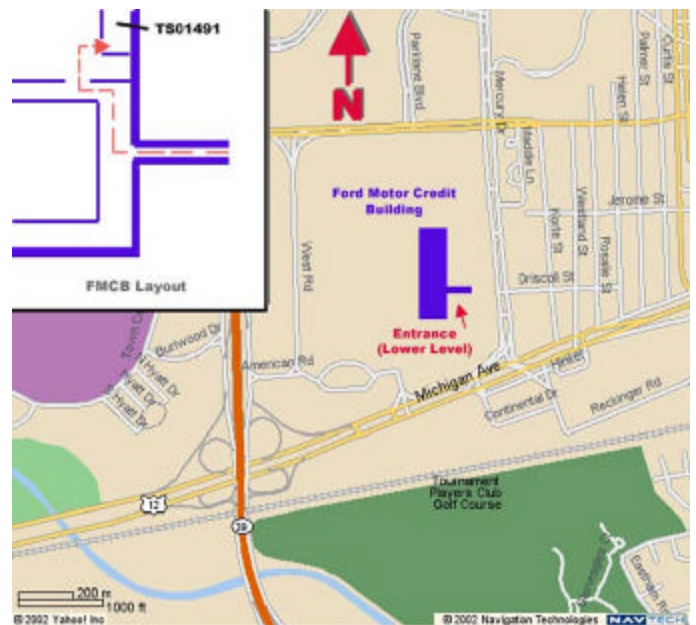
A subscription to the STAR STUFF newsletter and the quarterly newsletter the REFLECTOR published by the Astronomical League.
Discounts on ASTRONOMY and SKY & TELESCOPE magazines, after-hours access to the observing site and discounts at selected area equipment retailers.

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. 

***** NEW MEETING LOCATION *****

Effective February 27, 2003 the Ford Amateur Astronomy Club General Meeting (4th Thursday of each month) will be held at the Ford Motor Credit Building located off Mercury Drive in conference room TSO1491. This is the same place that we used to meet prior to last year. Enter building Only from the ground floor entrance closest to Michigan Ave. Upon entering, follow the hallway to your right. Once it jogs to the left, take the first right, turn to the next hallway. Shortly after this turn, the conference room will be on your right. AGAIN, ONLY USE THIS ENTRANCE FOR SECURITY REASONS.



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: gmlle17@ford.com

FAAC MEMBERSHIP RENEWAL FEE DUE

2003 FAAC Membership dues are past due! Gordon Hansen our new FAAC Treasurer is accepting payment. Annual Membership \$25 and Lifetime \$150. Past members with unpaid dues have been removed from the mailing list and will not have access to the Island Lake observing site.

MINUTES OF THE FEBRUARY 27, 2003 FAAC GENERAL MEMBERSHIP MEETING

By Don Klaser

The President called the meeting to order @ 5:00pm. Introductions were held while pizza & pop were enjoyed by all. Various members discussed their astronomical adventures during the last month. Gordon Hansen was absent, so there was no treasurer's report. The minutes of the last meeting were accepted. A discussion was held concerning the start time of the meeting – it was the consensus of the group that we keep the start time at 5:00pm until we find a new location. The start-up of the FAAC library will be put on hold until we have a new home. The FAAC Dinner Party will be held at the City Tavern on Michigan Ave. in Dearborn on March 15. George Korody spoke about the upcoming imaging SIG at the Ford Family Center on Rotunda Dr. on March 6th from 5 to 7 pm. The main topic will be image stacking. Astronomy Day is May 10 – we will be at the Detroit Science Center. Also, we will attend the Astronomy Day lecture @ YMCA campout in Fenton; this is an evening event. We will also participate in an event on April 12 @ Lyon Oaks County Park. Don Nakic gave the technical discussion on sketching celestial objects. John Schroer presented the main program on the upcoming Mars opposition in August. The meeting was adjourned at 7:20pm.

TREASURER'S REPORT – 3/15/2003

By Mike Bruno

Balance on hand:	Checking	\$ 1,281.92
	<u>Savings</u>	<u>\$ 1,425.58</u>
Included in above	Scholarship	\$ (755.13)
	GLACC	\$ (319.00)
	=====	
Cash Available		\$1,633.37

A MESSAGE FROM THE PRESIDENT

By Don Nakic

Have you ever gone to a department store to buy a new gadget that you've been yearning for. When you go to the store to buy one you find not just one gadget, but many. Do you buy the one
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with the most features or the one that has the lowest price? After pondering the decision you drum up enough courage to ask for a second opinion; so you ask the sales clerk. Instead of getting some long dissertation on the device, you get, "I'm sorry I don't work in this department, let me call someone." After waiting a half hour, another clerk arrives and picks up the package and starts to read the box. A few minutes later the clerk says, "they all sort of do the same thing, I'm not sure which one you should buy." Sound familiar?

Just last week I was interested in buying a Taurus Tracker III to assist with framing and guiding my CCD images. I've heard a lot about the device but wasn't sure if it would suit my needs. I also wasn't sure if it was the brand to buy. I knew George Korody had one so I called him. George shared with me all the pros and cons with using the device. He walked me through on how you set it up, calibrate it, configure it for CCD imaging, and what all the accessories cost. George also pointed out all the potential issues, particularly with seeing bright, round stars through the guide port, which could pose an issue for an auto-guider. At this point in the conversation George recommended that I speak with Clay Kessler. So I gave Clay a call. He wasn't at his desk, so I left a voice mail message regarding my inquiry into the Taurus Tracker III. Within a few minutes I got a call back from Clay. He pointed out all the benefits and issues in much the same manner as George did. Clay also expounded on the issues with getting the right star image in the guide port. He also mentioned that his ST4 auto-guider worked very well with the device. Lastly, Clay stated that it was the best unit for quality, cost, and functionality. At this point I was convinced and confident about my purchase.

This experience was a memorable one for me. I can't tell you how many times I wish I had someone to talk to before making a big purchase decision. Having these types of contacts is a very powerful asset to have when purchasing astronomy equipment since much of the items are expensive. But keep in mind, I'm not the only one with this asset, you have it too. Being part of FAAC has many advantages and this one doesn't get spoken to very often. We are constantly asking questions about the latest telescopes, cameras, and accessories, particularly those individuals that are just getting into the hobby. I feel everything that I purchase in the past few years have been strongly influenced by fellow FAAC members. It's a great resource to have, so please take advantage of it. Also, please make yourself available to share your old and new equipment experiences. These evaluations make for great general meeting discussions and Star Stuff articles.

P.S. Thanks George and Clay for your help on the Taurus Tracker III ... it works great!

A CALL FOR PAPERS! *Papers, Papers...Star Stuff needs your input! Send it to me by April 15 for the next edition.*



Invisible Tornadoes

By Tony Phillips

The biggest problem with tornados-next to the swirling 300-mph winds-is that it's hard to see them coming.

But soon scientists will be able to foresee, not merely tornados, but the severe storms that spawn them, hours before there's even a cloud in the sky! Mind you, this isn't a vague "30 percent chance of rain today" type forecast. Thanks to a new satellite technology being co-developed by NASA, NOAA and the U.S. Navy, emergency personnel will actually watch the invisible beginnings of a storm unfold.

"They're going to know where the storm centers are forming before the storms are there," says James Miller, project manager for Earth Observing 3 (EO3), a satellite that will test out this new technology in 2005 or 2006.

Unlike the tiny water droplets that make up clouds, the water vapor that feeds storms is invisible to the human eye. Water vapor is easy to detect, however, at infrared (IR) wavelengths. EO3 will use an IR-sensitive device called GIFTS-short for Geosynchronous Imaging Fourier Transform Spectrometer-to make 3D movies of temperature, pressure, and water vapor in Earth's atmosphere.

Three or four hours before the storm clouds are visible, meteorologists will notice water vapor converging toward an area. This water vapor, which provides the "fuel" for the coming storm, is too close to the ground for today's weather satellites to see. Then meteorologists will check precisely how the air temperature over that area varies vertically (something else ordinary satellites can't do). This temperature variation determines whether the humid air will rise to form storm clouds. And when these conditions look ominous, the meteorologists can alert the public.

The goal of EO3 is to "test drive" this new technology and prove that it works. If successful, NOAA plans to incorporate GIFTS-style sensors into its next generation of weather satellites.

These future satellites will give meteorologists exactly what they need in order to give the people exactly what *they* need: an earlier warning that tornados may be on the way.

GIFTS and EO3 are managed by NASA's New Millennium Program. NASA and NOAA will operate EO3 during its first year in geosynchronous orbit above the United States. If the technology works as planned, the U.S. Navy will assume control of EO3, move the satellite to a point above the Indian Ocean, and use it to monitor weather in shipping lanes there.

For adults, the EO3 web site at <http://nmp.jpl.nasa.gov/eo3> has

more about the mission and the GIFTS instrument. For children, The Space Place web site at spaceplace.nasa.gov/eo3_compression.htm has a jazzy, interactive "squishy ball" demo of the data compression methods that will be used on EO3.

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



This severe tornado hit south of Dimmitt, Texas, on June 2, 1995

HYPED ABOUT HYPERING!

By Clayton Kessler

Hypering, or more properly "Gas Hypersensitization", is a technique that professional astronomers and amateur astrophotographers have been using for many years. This technique increases the sensitivity and efficiency of film by treating it with vacuum and a gas and heat mixture. The process removes oxygen and moisture from the film and the chemical reaction of the "forming gas" reduces the reciprocity failure of the film itself. This combination makes some films very suitable for long exposure astrophotography where they wouldn't work very well on their own.

Lumicon, the pioneer in amateur hypersensitization, claims a 4 to 15X increase in color film speed (depending on the emulsion) and a 15 to 30X increase in the speed of 2415 Tech-Pan black and white film. This sounds great but it comes with a price. You must either purchase film pre-hypered from Lumicon or you must hyper the film yourself. Hypered film does not store well – so plan on developing the roll right after using it. Hypered film can be developed in the normal manner. Color negative film can be processed by your favorite local one hour photo joint using standard C-41 chemistry.

The process of hypering is fairly simple although it requires some specialized equipment. Lumicon – as you might guess – sells the equipment that you need to hyper film in a selection of sizes. This equipment consists of a “Hypering Tank”, a vacuum pump (either hand or electric) and a tank of “Forming Gas”. The Hypering Tank has a “heat tape” wrapped around it. This allows you to bake the film for the required amount of time while bathed in the forming gas. Control of the temperature is somewhat critical and Lumicon offers a temperature controller that can be used with a 50 C thermal probe and a 30 C thermal probe.

Lumicon is currently out of business, which makes it difficult to find commercial hypering equipment or pre-hypered film.

Fortunately the manufacture of a hypering tank is WAY simpler than making – say – a 6” newtonian. There is some talk of Parks Optical resurrecting Lumicon and we will all have to wait and see what “develops”.

I made up my mind several years ago that hypering added a level of complexity to astrophotography that I was not ready for yet. For the last couple of years I have been seeing a used hypering setup at a Tucson astronomy store that was “on consignment”. Two years ago curiosity overcame me and I asked the price... hmmm... \$165.00..... Last year I noticed the setup was still there. On the second trip to Tucson last year it was STILL there – now it was challenging me! Oh heck – I just had to try the thing out!

I took the unit – a Lumicon 600 model – home and started to read up on hypering. I had an empty tank for forming gas so the first order of business was to find some gas. Lumicon sells forming gas that is 92% nitrogen and 8% hydrogen. This is a low enough concentration of hydrogen to be non-flammable. I checked with my local welding company and they offered 90% nitrogen and 10% hydrogen as a “standard” mixture. Instead of having the little tank from Lumicon filled I had them deliver a big tank along with my other welding supplies. This big tank cost about \$30.00 and will probably last the rest of my life. A regulator and some hose later I refilled the small tank to 200 PSI myself.

Now to try out the tank with some film. The Lumicon 600 system includes a hand powered vacuum pump and gage. The idea is to pre-heat the tank for a couple of hours, put the film into the tank – you can leave it right in the cassette – and evacuate the air. This involves using the hand pump until you reach –25 inches of Hg on the supplied gage. Then you fill the tank to +3 PSI with forming gas. Re-evacuate the tank with the hand pump, refill with forming gas. Repeat this process about 3 times to make sure that you have most of the oxygen and water vapor out of the tank. Once this evacuation process is complete refill the tank one more time to about +5 PSI. The film must then bake at 50 C for the length of time it takes to properly treat the film. How long? – well that depends.....

Hypering time is variable and it seems to be keyed on your system, the weather and, I think, magic! Most people go through a long process comparing developed but unexposed film strips that have been hypered to the same film that is unhypered. What you are looking for is a slight darkening of the orange film background. Yes – this seems like an awful lot of work to me too.

There are “recommended starting points” and this is how I have been hypering my film so far.

As you can see, I have not been very “scientific” about this but I think I have seen some very good results. I especially like the Royal Gold 200 hypered for 120 minutes and the Fuji SHQ 100 hypered for 90 minutes. The PJ400/LE400 seemed to like the 5 hour hyper the few times that I have been able to use these films. Even after more than a year I feel that I am “light” on experience with this process – but I am very happy with the results that I have seen so far.

RIDDLE OF THE MONTH

Submitted by Pat Korody

What heavenly body has a head and a tail?

MESSIER MARATHON SCHEDULED AT LAKE HUDSON

By George Korody

Messier Marathon is a term describing the attempt to observe as many of the 110 Messier objects as possible in a single night. This possibility occurs each year around the middle to late March, when it is possible to observe all 110 objects. A year when the moon is near its new phase is ideal since it will not obstruct viewing. Fortunately, Saturday, March 29 is the ideal weekend date this year and the moon will not be a problem.

The real challenge is to observe these objects without the aid of electronic wizardry and the purists even frown on using mechanical setting circles. The use of star charts and star-hopping is preferred. (Author’s note: I am not a purist!) The general procedure is to start observing objects low in the west just as dusk settles in and advance eastward during the night, ending up with the last objects low in the eastern sky near morning dawn. The dusk and dawn objects are a real challenge because they are so low in the sky near the horizon and solar glow. There is an excellent “Messier Marathon Search Sequence” listing available at <http://www.seds.org/messier/xtra/marathon/marath1.html>. This is a “must have” list of the best sequence to use to observe all 110 objects during the night.

The Astronomical League at <http://www.astroleague.org> offers various Messier observing certificates for those properly completing and recording some or all of the 110 Messier objects. This even includes certificates for objects observed with binoculars. A lot of other information can be found on Messier observing and Messier Marathons by doing a computer search.

The FAAC Club will join the Jackson Club and others in a Messier Marathon that will be held at the Lake Hudson State Recreation Area dark sky site near Adrian, Michigan on

Saturday, March 29. An annual state park vehicle sticker or day pass (\$4) is required. Instructions for obtaining the pass are available at the park entrance booth. The observing site will be at the beach (not the picnic area), which has a very large paved parking lot. The beach is about 1/2 mile beyond the entrance. A back-up date of the following Saturday, April 5, is set in event of inclement weather on March 29. See the Jackson Club site at <http://aaoj.homestead.com/files/aaoj.htm> for further details and directions. Click on "Current Events Page".

ASTRONOMICAL IMAGING S.I.G.

By George Korody

The fifth meeting of the Astronomical Imaging S.I.G. will be held at the Ford Family Service and Learning Center in the Training Conference Room on Tuesday, April 8 from 5:00 PM to 7:00 PM. The main topic of discussion and video demonstration at this meeting will be a continuation of image stacking by Don Nakic and Tony Licata, and if time permits a presentation by Jim Frisbie on histogram adjustment. All FAAC Club Members are welcome to participate; just show up at the meeting.

A LITTLE HUMOR!

By George Korody

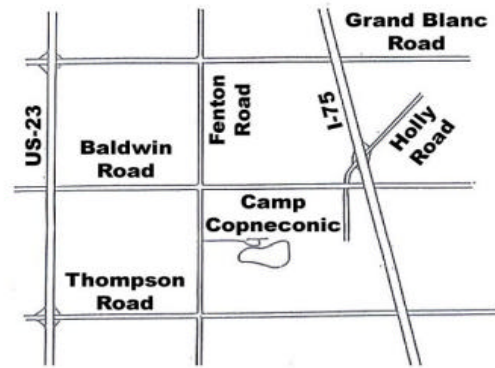
Why is it that when someone tells you that there are over a billion stars in the universe, you believe them, but if they tell you there is wet paint somewhere, you have to touch it to make sure?

ASTRONOMY 101 FOR FARMINGTON YMCA INDIAN GUIDE PROGRAM

By Don Nakic

On May 10th, FAAC will host Astronomy 101 for the Farmington YMCA Indian Guide Program during their Spring campout. Briefly, the Indian Guide Program is a parent and son program that sort of corresponds with the Boy Scouts except that parent and child work together on the activities. The children are between the ages of 5 to 14. The club has been asked to introduce the group to astronomy through presentations and observing. The program will be at Camp Copneconic in Fenton, which should provide great skies for some deep sky viewing. Further details of the event will be provided at upcoming FAAC General Meetings and in the April issue of Star Stuff. Below is a map showing location of Camp Copneconic. I look forward to seeing you there.

Camp Copneconic Directions



US-23 from the South: Follow US-23 to Thompson Rd. exit. Exit, turn right and follow until you come to the second flashing light. This is Fenton Rd. Turn left and follow for 1/2 mile to the camp entrance (on the right side).

I-75 from the South: Exit at Holly Rd (exit 108), turn left and drive to flashing light (Baldwin Rd.) Turn right on Baldwin Rd. and follow to the next light (about three miles). This is Fenton Rd. Turn left and follow until the camp entrance (on the left side).

March 27, 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	Greg Burnett	15 min
- Rendering Status	Everyone	5 min
- Guiding for Astrophotos	Jim Frisbie	35 min

ASTRONOMICAL CALENDAR

March 2003

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

March 24	Last Quarter Moon - 8:51pm
March 25	Moon near Mars - morning
March 29	Moon near Venus - morning

April 2003

April 1	New Moon 2:19 pm
April 6	Daylight Savings Time begins
April 7	Saturn near Moon - evening
April 9	First Quarter Moon 7:40 pm
April 10	Jupiter near Moon – evening
April 16	Full Moon 3:36 pm (Grass or Egg Moon)
April 23	Last Quarter Moon 8:18 am
April 23	Mars near Moon – morning
April 28	Venus near Moon - dawn

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

FAAC CALENDAR

Activity	Date	Time
- General Meeting	Mar 27	5 pm
- FAAC Board Mtg	Apr 10	5 pm
- Lyon Oaks	Apr 12	
- General Meeting	Apr 24	5 pm
- Forest Elementary	May 4	
- FAAC Board Mtg	May 8	5 pm
- UMD Star Party	May 9	9 pm
- Astronomy Day	May 10	
- Astronomy 101: YMCA	May 10	
- Lunar Eclipse – Lk Erie	May 15	
- General Meeting	May 22	5 pm
- FAAC Board Mtg	Jun 12	5 pm
- General Meeting	Jun 26	5 pm
- GLACC	Sept 5,6	
- Island Lake Star Party	Oct 4	

Recap: FAAC DINNER

By Dale Ochalek

A great close to another great year!

Pat Zajak and Vanna White, eat your heart out. Club president Don Nakic led the way with game show hi-jinks, puzzlers, and honorary citations, at the annual FAAC dinner, held Saturday, March 15, at the City Tavern in Dearborn. About 40 members and guests joined in the festivities, which included dinner and cocktail hour, slide show, the puzzles and games, and most importantly, honors and acknowledgements for those members who contributed that extra effort this year. For starters, Al Bates garnered oohs and awes with a slideshow - a collection of images gathered from the club's numerous and talented astrophotographers (Al also doubles as resident FAAC

event photographer, and managed to snap a few candid shots for this publication, and the FAAC web site).

Next, after a fine dinner, several members were cited with certificates and gifts for their much-appreciated efforts this year, including content contributions to FAAC meetings and events, and technical presentations.

Then, after a painful astro-quiz revealed, to many of us, how much there is yet to learn, it was "on with the show"; Don and partner (V)Anna (Ann Nakic) hosted a "Wheel of Fortune" astro-puzzle segment, complete with panels of blank squares...although they were not selling vowels, at any price. Competition was fierce; the prizes were FAAC Star Party t-shirts.

Finally, the grab-bag gift exchange topped off the evening, closing another successful event, and yet another fine year, for the Club.

A delightful time, indeed, was had by one and all; for a splendid job - kudos to Don Nakic, Al Bates, George Korody, Bob McFarland, Ken Anderson, Pat Korody, Holly McFarland, Mike Bruno the City Tavern staff, and all those who helped organize the evening.

The Club would also like to convey its thanks, again, to all those FAAC members who have contributed so greatly to the club's success this year, and in years past.

Crestwood School District - Ensign Planetarium

Public Shows

1501 Beech-Daly

Dearborn Heights, MI 48217

(313) 274-3711

All shows begin at 7:00 pm

April 19: Earth Day and Astronomy Night

Raise your consciousness as we explore issues facing the space program and our own views of the night sky

May 14: The Latest in Space Exploration

Find out what we're sending and what we've gotten back from our exploring probes

June 11: Our Guest Star –Kristina!

Kristina Nyland shines as our special guest star as she returns from U of M for a presentation on the latest in astronomy

RIDDLE OF THE MONTH - Answer...

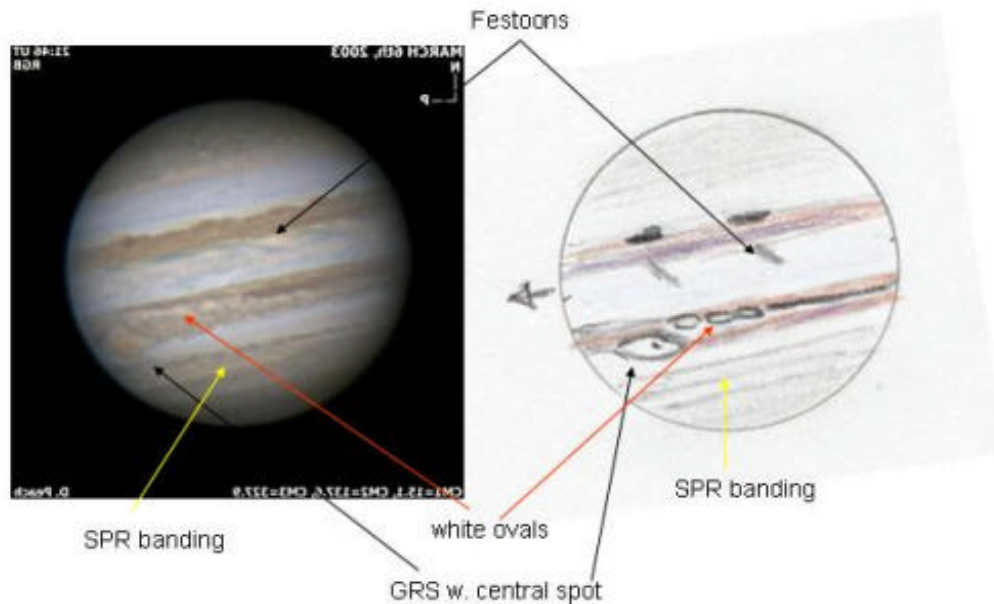
A comet!

Jupiter Rendering

By Don Nakic

On March 10th, Gary Strumolo sketched a beautifully detailed image of Jupiter through his 8" SCT. The rendering was made with a 9mm Plossl and a PC1 filter. The image shows the Great Red Spot (GRS) far across the surface, leaving what appears to be 3 white ovals behind it and a dark streak in the South Equatorial Belt (SEB). The North Equatorial Belt is shown to be slightly irregular with two dark 'barges' along its upper edge. After making a sketch, Gary found a photo of Jupiter near the date of the sketch. Great match!

This is a great example of how much detail one can render. I'm sure Gary will never forget the view, since it is probably permanently etched in his mind. I hope there are other FAAC members taking on the challenge to render a planet, particularly Mars. You will truly be surprised of the results.



ASTRONOMY OBSERVING NIGHT

By Bob McFarland

The Oakland County Parks and the Ford Amateur Astronomy Club are sponsoring an Observing Night at the Lyon Oaks County Park on April 12th - 6:00 PM to 11:00 PM. Bring your family and friends to the Lyon Oaks County Park for fun evening observing, the Moon, Mars, Jupiter, Saturn and many other deep sky objects through our telescopes and binoculars. If you have your own telescope, bring it along. If you want to learn how to use your telescope, ask our experts. Dress warmly and be prepared to enjoy the evening. The **Lyon Oaks County Park** is located at: 52251 Pontiac Trail (between Old Plank and Wixom Roads), Lyon Township **Park information:** 248-437-7345 **Directions:** Exit 159 North off of I-96. Go North (right) 2 miles. Turn West (left) on Pontiac Trail. Go approximately 1¼ miles to the park entrance on the South (left) side of the road. Inside the park, follow the directions to the golf course parking lot, which is about 1 1/2 miles inside the gate.

SATURDAY MORNING PHYSICS

Submitted by Don Sommers

Saturdays, April 5 & 12, 2003 - Katie Freese, U-M Professor of Physics,
Dark Matter and Dark Energy in Cosmology

The new millennium has brought a revolution in cosmology. We now have extensive observational confirmation for the Big Bang, yet major questions remain. What is the dark matter that makes up most of the mass in the universe, and what is the dark energy which is causing the expansion of the universe to accelerate? More information at: <http://www.physics.lsa.umich.edu/nea/smp/>

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JAMES J. BRESCIAMI, *Deputy Director*
DAVID WAHL, *Controller*
MICHAEL G. MAGEE, *Secretary*

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Web Site: <http://www.metroparks.com> • E-Mail: Mail@metroparks.com

HURON - CLINTON METROPOLITAN AUTHORITY



Address Reply To:
Lake Erie Metropark
Marshlands Museum & Nature Center
32481 West Jefferson
P.O. Box 120
Brownstown, MI 48173
Telephone or TTY: (734) 379-5020 or
1-800-477-3189
Fax: (734) 379-3317

COMMISSIONERS

ROBERT W. MARENS, *Chairman*
JOHN C. HERTEL, *Vice Chairman*
JAMES YOUNG, *Treasurer*
JAMES CLARKSON
WILLIAM E. KREGER
LYLE C. CAN HOUTEN
PETER S. WALTERS

January 7, 2003

Ford Amateur Astronomy Club
PO Box 7527
Dearborn, MI
48121-7527


Dear Club Members,

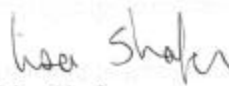
On behalf of Lake Erie Metropark and the visitors to "Erie Ice Daze '03", we would like to take a moment to thank you for your time and effort on our behalf.

Despite the wind and cold temperatures, over 1400 people came out to enjoy an otherwise spectacular weekend. In addition to museum staff, volunteers logged over 230 hours and combined for a total of 70 presented programs. A weekend of this caliber simply can't be successful without the dedication of great helpers like you.

Thank you again! We hope to see you soon!


Gerry Wykes
Museum Curator/Supervising Interpreter


Paul Cypher
Interpreter


Lisa Shafer
Interpreter

A FIVE COUNTY RECREATION AUTHORITY SERVING LIVINGSTON, MACOMB, OAKLAND, WASHTENAW AND WAYNE COUNTIES

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RIDER'S[®]

HOBBY SHOPS

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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Rider's Annual Spring Open House

Saturday March 29th

10AM to 8PM

Great savings all day long !

Riders now authorized JMI Dealer