



# ★ STAR STUFF ★

The Newsletter of the Ford Amateur Astronomy Club

April 2003  
Volume 12 Number 4



Editor: Jim Frisbie

## A MESSAGE FROM THE PRESIDENT

The next few months will be busy months for FAAC. There are a lot of activities planned and an important decision for club members to vote on.

As I put the agenda together for this month, I noticed there are a lot of events FAAC will be supporting in the months to come, some taking place in a matter of weeks. These events include, but not limited to, Astronomy Day, Lunar Eclipse at Lake Erie Metro Park, GLAAC, and Island Lake Star Party. On Astronomy Day, May 10<sup>th</sup>, we will be hosting a morning/afternoon event at the Detroit Science Center and an evening event for YMCA Campout. Please provide as much support as you can at these events. You will have a great time!

On a different subject, I would like to discuss the continuation of our scholarship fund. Currently, there are funds to cover the scholarships granted for calendar year 2002-2003. However, beyond this point the club needs to decide if this fund should continue or should the club put its monies toward a new fund. The one area I feel we could raise money for is a digital projector. There are two reasons why a projector would be of value to the club. The first reason is due to our dependency on computers for presentations. This stems from wide spread use of such technologies as digital cameras, both personal and astronomical, flatbed scanners, Internet, and Microsoft PowerPoint. Most all our presentations are depending more and more on these technologies. Throughout the year, club members are actively giving computer aided presentations at general meetings, star parties, out-reach programs, and at our annual dinner. The other reason for a projector is its tie to where we hold our meetings. Currently, the club has been looking for a new location for our general meetings. Unfortunately, the locations that were identified do not offer multi-media services such as a digital projector.

At the last board meeting, it was decided that the club would be responsible for only one fundraiser. The board feels that having two fundraisers will compromise each other's financial goal. In the past, FAAC raised about \$750/year for the scholarship fund. If the same amount of money were contributed toward a projector fund, which has a targeted goal of \$1,400, it would take about two years to purchase a projector. The club can shorten this time by participating in such activities as FERA fundraising events, which could include the selling of Auto Show Tickets.

In summary, I will be asking everyone to vote at the beginning of April's FAAC General Meeting on the following proposals:

- a) Continue scholarship fund for 2003-2004, or
- b) Digital projector fund with a goal of \$1,400

Don Nakic

## MAY 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 15<sup>th</sup> 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](http://www.be.ford.com/astro/faac.html) or the public Internet: [www.boonhill.net/faac](http://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.

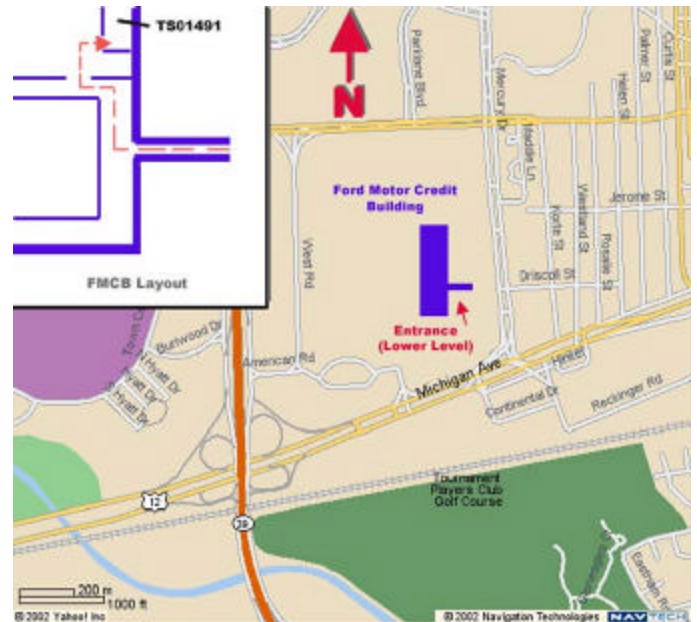
**Magazine Discounts:**

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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 (4<sup>th</sup> 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](mailto:gmlle17@ford.com)

# MINUTES OF THE MARCH 27, 2003 FAAC GENERAL MEMBERSHIP MEETING

By Don Klaser

President Don opened the meeting at 5:00pm. Members & guests introduced themselves and pizza & pop was enjoyed by all. A total of 43 people were in attendance. Several members talked about their observing experiences over the past month. Gordon Hansen gave the treasurer's report, and Don Klaser gave the secretary's report. We have received 5 applications for this year's scholarship awards. George Korody announced the April's Imaging SIG will be held on April 8<sup>th</sup> from 5-7pm. at the Family Service Center on Rotunda Dr. A discussion was held about purchasing a computer projector for the Club. Ken Anderson lead a discussion on the upcoming ILSP; he handed out an agenda & a time line graph for completing various projects. Other upcoming events included Beginner's Night at Lyon Oaks County Park on April 12, Astronomy Day events at the Detroit Science Center & YMCA Camp Out in Fenton & Lunar Eclipse Observing at Lake Erie Metro Park on the night of May 15/16. Also, the GLAAC 2 night event will be held at Kensington Metro Park on Sept 5 & 6. Boon Hill will be held on June 25 & 26. Greg Burnett presented the technical discussion on Astronomical 2-D models, & Jim Frisbie gave the main presentation on Guiding for Astrophotography. The meeting was adjourned at 7:30pm.

## TREASURER'S REPORT – 3/27/2003

By Gordon Hansen

Balance on hand:	Checking	\$ 1,349.22
	<u>Savings</u>	<u>\$ 1,425.58</u>
Included in above	Scholarship	\$ (755.13)
	GLACC	\$ (319.00)
	=====	
Cash Available		\$1,700.67

**A CALL FOR PAPERS!** *Over the past several months, some of you may have noticed that, I have increased column widths, reduced the font size, and ran up against the 1 oz. / 12 page postage limit. For the first time on record, one postage stamp will not send all the information we have to report this month. Some of the material will be held in a "Kitty" and included in May edition. Thanks for your response to last months' "A CALL FOR PAPERS". **Keep those cards and letters coming!** Maybe next month we will need two stamps. Send your input to me by May 12 for the next edition.*

Thanks,  
The Editor



## MUSICAL SATELLITES

By Tony Phillips

If light were sound, then chemicals would play chords.

Water: C major. Cyanide: A minor. Chlorophyll: G diminished 7th. (Please note that the choice of chords here is only for the sake of illustration, and not meant to reflect the actual spectra of these chemicals.)

It's a loose metaphor, but an apt one. Musical chords are combinations of frequencies of sound (notes), while chemicals leave unique combinations of dips in the frequency spectrum of reflected light, like keys pressed on a piano. Spectrographs, machines that recognize chemicals from their "chords of light," are among the most powerful tools of modern chemistry.

Most earth-watching satellites, like the highly successful Landsat series, carry spectrographs onboard. These sensors measure the spectra of light reflected from forests, crops, cities, and lakes, yielding valuable information about our natural environment. Current satellites do this in a fairly limited way; their sensors can "hear" only a few meager notes amid the symphony of information emanating from the planet below.

EO-1 could change that. Short for "Earth Observing 1," EO-1 is an experimental NASA satellite in orbit since 2000. It's testing out a more advanced "spectrometer in the sky"-the Hyperion hyperspectral imager. How good is it? If Landsat were "chopsticks," EO-1 would be Gershwin's "Rhapsody in Blue."

The Hyperion sensor looks at 220 frequencies in the spectrum of visible and infrared light (0.4 to 2.5 microns) reflecting off Earth's surface. Landsat, in contrast, measures only 10. Bryant Cramer, who manages the EO-1 project at the Goddard Space Flight Center, puts these numbers in perspective. "If we flew Landsat over the northeastern United States, it could readily identify a hardwood forest. But using hyperspectral techniques, you probably can . . . tell the oak trees from the maple trees."

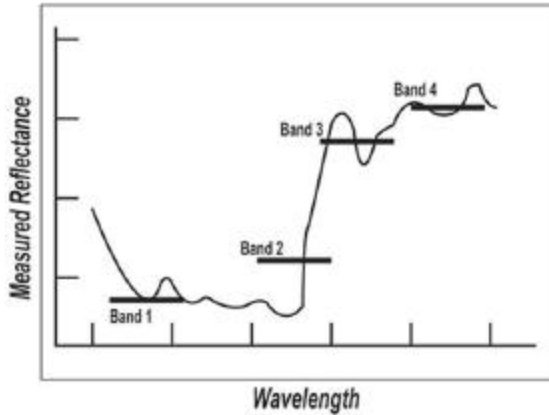
Future earth-watching satellites may use Hyperion-like instruments to vastly improve the environmental data they provide. EO-1 is paving the way for these future missions by taking on the risk of flight-testing the sensor for the first time.

For farmers, foresters, and many others, this new remote sensing technology will surely be music to the ears.

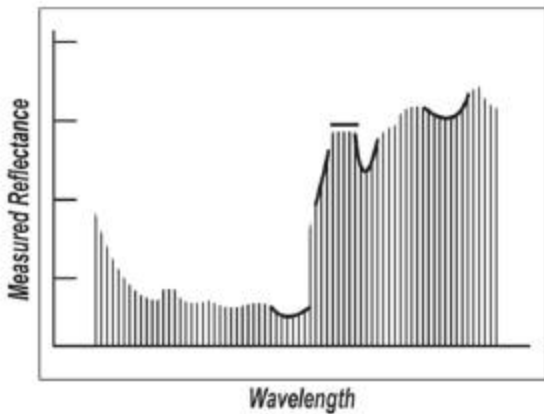
Read about EO1 at <http://eo1.gsfc.nasa.gov> . Budding young

astronomers can learn more at  
[http://spaceplace.nasa.gov/eo1\\_1.htm](http://spaceplace.nasa.gov/eo1_1.htm) ..

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



Multispectral Imaging (few bands)

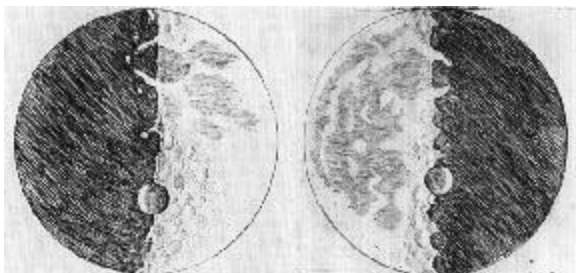


Multispectral Imaging (hundreds of bands)

*Hyperion instrument distinguishes hundreds of wavelength bands, while current Landsat instrument images only a few.*

## SKETCHING

By Gary S. Strumolo



While Galileo had no choice but to render what he saw on the  
April 2003

moon by hand, like above, we certainly don't. With the wide availability of CCD and digital cameras, laptop computers with image processing software that can stack hundreds of images, and automatic controls that enable you to sit inside your home while the system operates outside automatically, you may not even have to touch your telescope to get a great picture!

But is that why we got a scope in the first place? I know it's not why I did. Quite frankly, if I want to see a beautiful picture of a DSO or planet I can get one in seconds on the web or in a book. The thing that attracted me to viewing is the connection it makes between me and the sky. There is still something exciting about pointing my scope to a "star" in the sky, looking in the eyepiece, and seeing the glorious rings of Saturn slowly glide across the FOV. And while taking high quality photos of celestial objects is equal parts skill and art, to me it removes us from the primary reason for going out – to *observe* and be part of the changing universe.

This concept of observing is an important distinction. Without sketching, and even with photographing, you are just *seeing* the object. In the latter case, you rely on the CCD to capture things you perhaps can't see by yourself. When you sketch, you are forced to *observe* the object; to detect every little detail so you can put it down on paper. These details remain with you far longer than if you simply 'see' it.

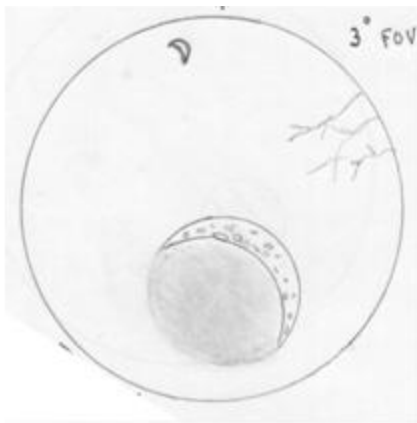
## Equipment

There was a recent article in *Astronomy* magazine that reported on an analysis of Galileo's scopes. It concluded that both were close to diffraction limited, with magnifications of 20x and 30x. I have two scopes: an Edmund Astroscan (4.25" Newtonian, 450mm FL) and a Celestron G8 (8" SCT, 2032mm FL on a CG5 GEM). The Astroscan is often run at Galileo's power, but with a vastly larger FOV. Both of my scopes have their uses, as you'll see soon. For recording I use a sketchbook, a variety of pencils, a good eraser, and some templates. I always record the date of the sketch, my impression of the seeing conditions, and the equipment used.

There are two reasons to sketch: to record an event or to record detail. Sometimes both. Let's look at some examples.

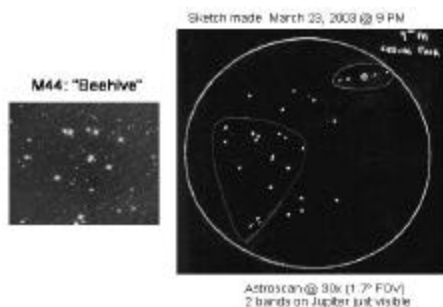
## Close alignments

On December 1<sup>st</sup> 2002 at 7 AM the moon and Venus were close. So I took out my Astroscan and rendered the following:



The Astroscan's 3 degree FOV was able to capture both the crescent moon and crescent Venus in a single shot (with some out-of-focus tree branches as a garnish on the side)! Here I didn't try to represent the moon's craters exactly, just enough to represent what it appeared like in the EP (magnification of 16x).

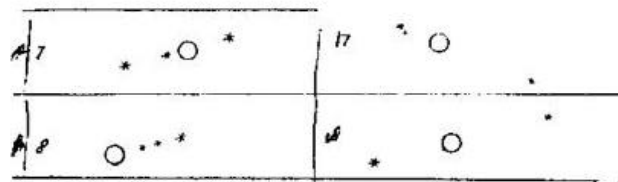
Another close alignment occurred on March 23<sup>rd</sup> of this year when Jupiter passed close to the Beehive Cluster M44. I made this rendering at 9PM under fair seeing conditions, again with the Astroscan:



In this case, I used a 15mm Plossl in the Astroscan, giving me a 30x magnification and a 1.7 degree FOV. With this, I could enclose both objects for an impressive view. You'll note Jupiter and its 4 moons were clearly visible in the upper right, and I could even detect two bands on it at this power (it had to be centered in the FOV for this to be clearly seen, however). The Beehive was very apparent, along with other neighboring stars. On the sketch I enclosed both objects, and placed a photo of M44 to its left for comparison. I took care to try to draw the Beehive stars in their correct positions and you can see that for the most part I was able to capture them quite well (some stars on the left are slightly out of place). Here's the thing that sketching does for you – I will remember the arrangement of these stars much better because I sketched them than if I had simply looked at M44 in my mad rush to do a marathon.

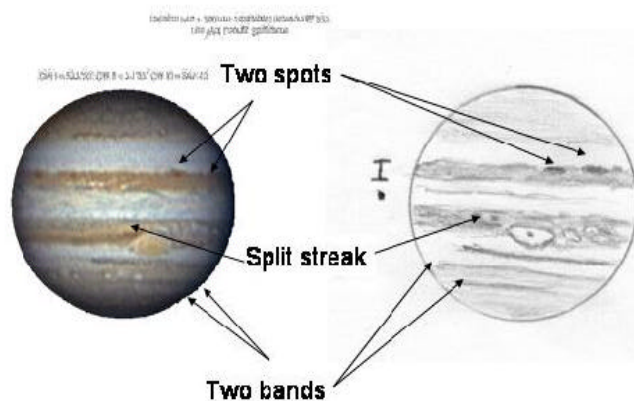
Oh, by the way, flipping through my book I discovered another sketch I made on 9/7/02 at 6AM when Jupiter and M44 again came close and was recorded. It was interesting to compare the two sketches and see how the positions had changed!

## Jupiter



These are sketches of Jupiter made by Galileo (my daughter says I think I'm Galileo when I go out at night to view and sketch in the cold). Not terribly detailed, are they? I often wonder if his scopes were as reported above why he didn't record the bands?

With better equipment (my G8) I'm able to view Jupiter somewhat better than he could:



To make my Jupiter sketches I start with a 1 3/8" 70 degree ellipse template. This has the right shape for Jupiter (it's NOT a circle). I then mentally record any additions to the NEB, SEB or the polar regions, such as barges, the GRS, white ovals, festoons, etc. For example, the sketch on the right above was made on March 2<sup>nd</sup> between 10:00 – 10:20 PM under fair seeing conditions. I noted two dark barges on the top of the NEB, a thin band running in the EB, the GRS with a central dot followed by white spots to its right, and preceded by a light zone 'splitting' the SEB to its left. Below the GRS was a dark line that went past it, but not fully across the globe. Below that were two darker lines in the STB-SPR zone. Days later I discovered a photo taken on the same day just earlier to my observing time. The comparison is quite good! The March *Star Stuff* issue has another sketch I made of Jupiter that month. I often include these photos alongside my sketches, so I can see how well I captured the object's detail.

Jupiter is a great planet to sketch because things are always changing, so you're not sketching the same thing all the time. And it's big, so you don't have to try to draw details in a tiny dot!

## Take up that pencil

I think that sketching is a great way to improve your observing skills, get better enjoyment out of viewing, and create a record you can return to recall many interesting events. You don't need to be an artist to do it, and you'll be amazed at how quickly you'll improve if you keep at it. I'm looking forward to Mars!

## 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 will be 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.

## SPACE STATION ASTROPHOTOGRAPHY

From the NASA website

Submitted by Greg Burnett

**March 24, 2003:** It's a weird place for an astronomer. Meteors fly underfoot. Auroras appear just inches in front of your nose. City lights twinkle, but stars don't. Astronaut Don Pettit loves every minute of it. "There's always something good to see out the window of the space station," says Pettit, who happens to be an amateur astronomer as well as the science officer of the International Space Station (ISS).

**Below:** Astronaut Don Pettit, Expedition Six ISS science officer, takes pictures of Earth through a window in the Destiny laboratory on the International Space Station (ISS).



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"Lately we've been having some extraordinary auroras," he reports. "They meander like big green amoebas crawling across the sky. Sometimes there is a faint touch of red layered above the green. These lights are constantly changing. They swirl. Bright spots come and go. Green blobs transform into upward-directed rays topped by red feathery structures." Long before he went to live onboard the space station, Pettit was an avid aurora watcher. "I've taken photos of the Northern Lights from Alaska and Canada," he says. Some of those displays were magnificent, but "the view from station is even better."

**Below:** Auroras over Canada with the [Manicouagan impact crater](#) in the foreground. Clouds and Earth's surface are illuminated by moonlight. "Here in the same picture we have two interesting space phenomena: asteroid impact damage on the surface of Earth and auroras," notes Pettit.



Auroras are caused by electrons and protons from space raining down on Earth's atmosphere. The solar wind, through a set of complex and fascinating interactions with the Earth's magnetic field, is the ultimate source of energy that drives these particles toward our planet. When they hit the top of the atmosphere, they excite atoms and molecules and make the air glow. Reds and greens come from atomic oxygen, blues from nitrogen. These colorful lights range in altitude from 80 km to 500 km above Earth's surface. The ISS orbits our planet about 400 km high, so the space station can actually fly through auroras. There's no danger to astronauts, though. The aurora-causing electrons and protons are thousands of times less powerful than potentially hazardous cosmic rays. "[Last January] we flew through an auroral curtain over Canada," recalls Pettit. The station was surrounded by a dimly glowing red fog. Just below were green rivers of light. "It was like I had been shrunk down to some miniature dimension and inserted into a tube of a neon sign. And it was just on the other side of the window pane. I wanted to reach out and touch, but of course I couldn't." "Afterwards I had to clean my nose print off the window." Auroras aren't all: "I've seen an occasional meteor while looking down through the Destiny Lab window," he says. Meteors disintegrate in Earth's atmosphere below the space station, so you have to look down to see them! "You can also see space junk orbiting nearby. Sometimes it flickers due to an irregularity catching light as it rotates. And there are satellites, too. A flash of sunlight glinting off an Iridium satellite near the Southern Cross really brought a smile to my face." Pettit recently took some lovely pictures of star fields in the southern hemisphere:

the Large Magellanic Cloud (a nearby galaxy that orbits our own Milky Way galaxy), the Coal Sack Nebula (an inky-black interstellar cloud), and the Southern Cross.

**Below:** A snapshot of the [Large Magellanic Cloud](#)--an irregular galaxy visible from Earth's southern hemisphere. Credit: NASA and Don Pettit.



"These pictures show how wonderfully stable the space station is," says Pettit. "When the camera is mounted to the window, the ISS itself serves as a tripod. Any movement would cause streaks in the star images." But the station's Control Moment Gyros maintain attitude with rock-solid precision. "I don't believe that the ISS was designed for astronomy," adds Pettit, "but it functions very well as a platform for astrophotography."

One of the curious things about sky watching from orbit is the appearance of stars. "They don't twinkle," says Pettit. Twinkling is caused by irregularities in Earth's atmosphere that refract starlight to and fro. But in orbit there is no atmosphere. Stars are remarkably steady and piercing. City lights, on the other hand, do twinkle. "From the space station we can see city lights when it's nighttime on the planet below," explains Pettit. "Shining upwards through the atmosphere, they twinkle like stars. They're beautiful." When Pettit tried to take pictures of city lights he quickly realized it wasn't as easy as photographing the stars. The station, traveling 17,500 mph, races around Earth in only 90 minutes. Lights on Earth's surface move through the window too quickly for long exposures. Stars, on the other hand, appear nearly motionless because they're so far away. It's like driving down a highway in a fast-moving car: Distant mountains and trees don't appear to move much, but the fringe of the road is a blur. "I needed something to help me track the city lights, to cancel the orbital motion of the station."

**Below:** Don Pettit's homemade "barn door tracker" onboard.



Pettit is well-known to his friends as an ingenious gadget builder, and it didn't take him long to devise a solution to the tracking problem. "I assembled a 'barn door tracker'," says Pettit. "It's based on the fine gimbal movements in the IMAX camera mount for the Destiny Lab window. I figured out a way to mount a threaded screw and nut (scavenged from a Progress rocket) and drive it with a Makita drill driver." The drill turns the screw, which moves the camera and its spotting scope. "All of these modifications clamp on to the IMAX mount and do not change its original function in any way," notes Pettit. "I manually compensate for the station's motion by looking through the spotting scope and running the drill at the same time. It takes a bit of practice, but you do learn to track." Pettit has since photographed cities and towns around the world. "With tracking we can see individual city blocks--no blurring." Some towns are well-organized like checkerboards. Others are more ... organic. London, for example, resembles a glittering luminous spider web splayed across the landscape. "Really nice," says Pettit.

**Below:** London, England, photographed by Don Pettit from Earth orbit in February, 2003.



For sheer beauty, though, "my favorite is still auroras," he says. "I can't get enough of them."

Pettit is scheduled to remain onboard the ISS until May. Between now and then, in his spare time, he plans to continue taking pictures and sending them to Earth. There'll be more auroras, more meteors and star clouds and city lights. And probably lots more nose prints on the window....



## SETI REAPS 150 POINTS

New York Times

Submitted by Greg Burnett

The SETI@Home project, in which millions of home computers have analyzed interstellar radio signals for signs of alien civilizations, is investigating 150 of those signals in more detail.

Starting today, project scientists from the University of California at Berkeley are at the Arecibo radio telescope in Puerto Rico. They will aim the scope at 150 points that are sources of the signals that were determined to be interesting enough to warrant further investigation.

The scientists caution, however, that the odds that they will actually confirm the existence of an alien civilization are exceedingly slim.

## ASTRONOMICAL IMAGING S.I.G.

By George Korody

The next meeting of the Astronomical Imaging S.I.G. is planned to be held at the Ford Family Service and Learning Center. This is the same location as all previous meetings. However, at this writing the Center have not finalized their May schedule. Therefore, the exact date will not be determined for a few more days. All members of the S.I.G. will be notified when the date is available.

The main topic at this meeting will be image enhancement through the use of histogram adjustments. The presentation and discussion will be led by Jim Frisbie. Previous meetings have covered such topics as digital and film imaging equipment, image acquisition techniques, autoguiding, focusing techniques, methods and benefits of image stacking, etc. All Club Members are welcome to join this S.I.G.. If you are not a member and would like to join, contact the writer via E-mail at gkorody@comcast.net.

## 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).

### April 24, 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
- TBD	Don Nakic	5 min
- Telescope Types	John Kirchhoff	35 min

## ASTRONOMICAL CALENDAR

### April 2003

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

- April 23 Last Quarter Moon 8:18 am
- April 23 Mars near Moon – morning
- April 28 Venus near Moon - dawn

### May 2003

- May 1 New Moon 8:15 am
- May 4 Saturn near Moon – evening
- May 8 Moon near Jupiter – evening
- May 9 First Quarter Moon 7:53 am
- May 15 Full Moon 11:36 pm Planting Moon
- May 15-16 Lunar Eclipse Maximum at 11:40 pm
- May 17 Mercury at Aphelion
- May 22 Last Quarter Moon 8:31pm
- May 22 Moon near Mars - morning
- May 28 Mercury near Venus, Moon – morning
- May 29 Moon near Venus – dawn
- May 31 New Moon 12:20 am

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

- 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
- Summer Solstice Jun 27-29
- GLACC Sept 5,6
- Island Lake Star Party Oct 4

### Lunar Eclipse, Lake Erie Metro Park, Thursday, May 15



**Crestwood School District - Ensign Planetarium  
Public Shows  
1501 Beech-Daly  
Dearborn Heights, MI 48217  
(313) 274-3711**

All shows begin at 7:00 pm

**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

## FOREST ELEMENTARY – THANK YOU NOTE

Don & Club Members,

Thanks you so much for making out 2<sup>nd</sup> Annual Star Gazing Night a huge success! The slide show was beautiful and the kids loved looking at the telescopes. The Star Lab was a big hit with the kids, too! You have been so gracious to come out here and help us out! We also appreciate you coming again tonight to see the planets. Thanks so much!

Chris Walker  
Kathy Koperski

## FAAC CALENDAR

Activity	Date	Time
- General Meeting	Apr 24	5 pm
- NIAAG/GREATCON	Apr 25/26	
- Boon Hill	May 2	
- Forest Elementary	May 4	
- FAAC Board Mtg	May 8	5 pm

April 2003

STAR STUFF

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# YES, YOU.

## NASA'S Educator Astronaut Program

### Who?

For the first time, NASA is recruiting individuals with specific experience and expertise in K–12 education to join its full-time Astronaut Corps. NASA is looking for Educator Astronauts to help lead the Agency in the development of new ways to connect space exploration with the classroom and to inspire the next generation of explorers. Selected applicants will be designated Educator Astronaut candidates and will be assigned to the Astronaut Office at Johnson Space Center in Houston, TX. Educator Astronaut candidates must successfully complete 1 to 2 years of training and evaluation. Once the Educator Astronaut candidates have successfully completed their training, they will be eligible for multiple flights aboard the Space Shuttle and the International Space Station.

### What are the qualifications?

A minimum of 3 years of in-classroom teaching experience within the past 4 years.

Certification as a K–12 educator.

A bachelor's degree from an accredited college or university in one of the following areas:

- Education with a concentration in one of the following disciplines: mathematics, physical science, engineering, or biological science. A "concentration" means a minimum of 18 semester hours or equivalent (however, 24 hours is desired) in the respective discipline.
- Physical science.
- Biological science.
- Engineering.
- Mathematics.

The ability to pass a NASA Class II Space Flight Physical.

United States citizenship.

### How can you apply for the program?

- The application can be obtained online at <http://edspace.nasa.gov>. Individuals without Internet access can call 1-877-ED-ASTRO.
- The submitted application package must include the applicant's résumé, the Educator Astronaut Supplemental Information Sheet, a report of medical history, a supplemental medical history, race and national origin identification (optional), three essays, academic transcripts (with cover sheets), and four letters of recommendation (with cover sheets).
- Completed applications and required materials **must be received no later than April 30, 2003**. Applications and information not received by April 30, 2003, will not be considered.

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



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## **HOBBY SHOPS**

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Celebrate National Astronomy Day May 10th by saving an extra 10% off ALL astronomical accessories in stock. This offer includes books, eyepieces, filters and photo items. Bring in your club card and this ad to take advantage of the savings!  
Offer good through May 20th